



PROCEEDINGS & TRANSACTIONS

OF THE

CROYDON

NATURAL HISTORY AND SCIENTIFIC

SOCIETY.

FEBRUARY 19, 1907, TO JANUARY 21, 1908.



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PROCEEDINGS
OF
THE CROYDON NATURAL HISTORY AND
SCIENTIFIC SOCIETY.

1907—1908.

Thirty-eighth Annual Meeting,

Held at the Public Hall, Croydon, January 21st, 1908.

The President, BALDWIN LATHAM, M.I.C.E., F.G.S., in the chair.

The Council's Report and the Statement of Accounts for 1907 were read and approved.

The following gentlemen were elected Officers of the Society for the ensuing year:—

President.—BALDWIN LATHAM, M.I.C.E., F.G.S., &c.

Vice-Presidents.—F. CAMPBELL-BAYARD, LL.M., F.R.Met. Soc.; J. EDMUND CLARK, B.A. B.Sc., F.G.S.; W. F. STANLEY, J.P., F.G.S.

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Hon. Lanternist.—J. H. BALDOCK, F.C.S.

Hon. Librarian.—ALFRED RODDS.

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Geological Committee.—W. BRUCE BANNERMAN, F.S.A., F.G.S., The Lindens, Sydenham Road; T. F. CLARKE (Secretary), Lurline, Blenheim Crescent; G. J. HINDE, Ph.D., F.R.S., F.G.S., 24, Avondale Road; A. J. HOGG, 43, Whitworth Road, South Norwood; H. C. MALE, M.D., Cromer Lodge, 74, Birdhurst Road; G. W. MOORE, Bryndhurst, Dornton Road; T. K. F. PAGE, 9, Rosemount, Wallington; H. FRANKLIN PARSONS, M.D., F.G.S., Oakhyrst, 4, Park Hill Rise; N. F. ROBARTS, F.G.S., 23, Oliver Grove, South Norwood; W. WHITAKER, B.A., F.R.S., F.G.S., Freda, Campden Road.

Meteorological Committee.—F. CAMPBELL-BAYARD, LL.M., F.R. Met. Soc. (Secretary), Cotswold, Wallington; J. EDMUND CLARK, B.A., B.Sc., F.G.S., Asgarth, Riddlesdown Road, Purley; BALDWIN LATHAM, M.I.C.E., F.G.S., &c., Park Hill House, Stanhope Road.

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Photographic Committee.—J. H. BALDOCK, F.C.S. (Lanternist), Overdale, St. Leonard's Road; H. D. GOWER, 55, Benson Road; R. F. GRUNDY, 8, Havelock Road; J. M. HOBSON, M.D., B.Sc., Woodside Court, Croydon; A. ROODS, 67, Thornhill Road; W. W. TOBLEY, 46, Friends' Road.

Zoological Committee.—T. F. CLARKE, Lurline, Blenheim Crescent; H. T. CROSFIELD, B.A. (Secretary), Walden, Coombe Road; STANLEY E. HALL, 17, Dornton Road, South Croydon; G. W. MOORE, 15, Dornton Road, South Croydon; H. FRANKLIN PARSONS, M.D., F.G.S., Oakhyrst, 4, Park Hill Rise; A. TARVER, 7, Stuart Road, Thornton Heath.

Council's Report, 1907.

The progress of the Society during the past year has been on the whole satisfactory. The number of members now stands at 176, made up as follows:—159 ordinary, 13 teachers, and 4 juniors. New members during the year number 17, and resignations and loss for other reasons 10, leaving a net increase since the last annual meeting of 6.

The addition to Rule VIII. to the effect that teachers should be admitted at a subscription of 5s. has not as yet brought us many new members, several of those who joined under it having since resigned.

The attendance of the ordinary meetings has kept well up to the average, and on some occasions has been very good. At these meetings the following papers have been read or lectures held:—

February 19th.—Reports of the Meteorological and Botanical Sections.

March 19th.—Lecture by Mr. G. C. Druce on “Animal Sculpture in Churches.”

April 16th.—Paper by Dr. T. A. Dukes, B.Sc., “The Ice Age: its Cause and Man, its Consequence.”

May 28th (instead of 21st, Tuesday after Whit-Monday).—A note was read on the excavations at Beddington Sewage Farm.

September 17th.—Mr. A. L. Lewis read a short account of his visit to Autun on the occasion of the Third Annual Meeting of the Congrès préhistorique de France.

October 15th.—Lecture, illustrated, by the Photographic Survey and Record of Surrey, read by Mr. W. Whitaker, F.G.S.

November 19th.—Lecture by Mr. E. Lovett, F.H.S., “Alpine Scenery and Alpine Flora,” illustrated.

December 17th.—Paper on “The Coming of Halley’s Comet,” by Mr. J. E. Clark, B.Sc.

Sectional meetings have been held, and various excursions made, of which reports will appear in the ‘Proceedings’; and it is a matter of congratulation that all Sections, with one exception, have been active, some having had regular meetings or excursions. But it has been in other cases considered better to have fewer meetings with better attendance, and in most, if not all, cases the attendance has been good, and interesting subjects have been brought up for discussion.

Photographic Section and Dark Room.—Mr. J. G. Lincoln endeavoured to hold meetings of this Section, but unfortunately they were not well attended, so that it became useless to ask gentlemen to come down and give demonstrations, and interest

appears to have died out. This is possibly owing to the competition of more specially photographic societies. But it is very desirable to maintain the Section, in order to be able to obtain the assistance of able photographers for special work in connection with other Sections.

The Public Hall Company, at our request, reduced the rent of the Dark Room to £6 per annum instead of £10, though with the proviso that the old rent should be resumed as soon as this Society finds itself in a position to pay it. At present, however, the room is but little used as a Dark Room.

The Council desires to express appreciation of the efforts of the Sectional Secretaries to arouse and maintain interest in their different subjects, and to all who have come forward to assist the Society by giving lectures or reading papers, or in any other way.

(For the President's Address, which usually appears here, see p. cxxxvii.)

Summary of Proceedings.

EXCURSIONS.

May 20th (Whit-Monday).—Excursion to Oxted, Limpsfield Chart, Crockham Hill, and Westerham. Conductor, Mr. G. W. Moore.

The weather, owing to the return of cold and wet, was not encouraging for this excursion, and consequently only thirteen members were present.

On arrival at Oxted Station the party went at once to the church, and made a rather prolonged stay while Dr. Hobson pointed out the chief interesting features. He has contributed the following notes:—The church consists of a western tower, nave, north and south aisles, chancel, modern north transept, and ancient south porch. The earliest work, about 1180, is shown in remains of west responds on nave arcades embedded in Perpendicular work of existing responds (respond = a half-pillar or pier attached to a wall to support an arch). Early English work in base of tower (lancet window). Piscina in chancel and priest's door. Decorated chancel window. The internal moulding of east window is a fine specimen of flowing tracery. *Perpendicular*.—The church was Perpendicularized c. 1400, the low twelfth century arcades in the nave being then replaced by four centred arches. The porch is of same date, and the door original. At the east end of north aisle is the remains of a piscina, indicating a former chapel. From this point an oblique arched passage leads into the chancel. In the corresponding part of the wall separating the east end of south aisle from the chancel, are rood stairs leading up to an archway;

probably made in the fifteenth century to give access to the rood loft.

After leaving the church, the party separated somewhat, but met again at the corner of Limpsfield Common and crossed to Limpsfield Chart, where there are some quarries, from which a cherty stone is obtained for road-mending. Further on some other quarries were examined, which yield large masses of similar stone, and it is probably from these that the stone has been obtained for the walls of the small new church standing on the Common. No fossils were found. After lunching under some beech-trees, the party proceeded to Crockham Hill, where some smaller quarries were visited, whence stone for houses built in the immediate neighbourhood is obtained. Dr. Parsons found one fossil pecten. The stone obtained is probably "Rag" (not Kentish Rag) or Bargate Stone, from the Hythe beds. The course then taken was back to Kent Hatch, through the Squerries Park, where some exceedingly fine Scotch pines and beech-trees were noticed, to Westerham, a stop being made by the water at the Westerham entrance of the park, and Dr. Parsons found some freshwater limpets (*Ancylus fluviatilis*). This and all botanical specimens are alluded to in the following note supplied by Dr. Parsons. The members were disappointed in not being able to see Westerham Church, owing to the key having been broken in the lock in the morning. After tea at Westerham most of the party walked back to Oxted. A tree creeper (*Certhia familiaris*) was seen on an old tree at Westerham. During the day some heavy hail showers were experienced, and though it was fine on leaving Westerham, at Limpsfield the hail from a recent storm was lying thickly in many places.

Dr. Parsons gives the following botanical observations made during the excursion:—

As the route taken lay over the sandstone beds of the Lower Greensand, the number of flowering plants met with was comparatively small in comparison with the more varied flora on the chalk tracts. In some wet ground near Oxted Station were the golden saxifrage (*C. oppositifolium*) and the large sedge (*Carex paniculata*), with its tall tussocks, almost resembling some tropical monocotyledonous tree. On Chart Common the whortleberry was abundant, and a pretty pink and white variety of the milk-wort (*Polygala vulgaris*). Single plants of the ferns *Lastrea* *Filix-mas* and *dilatata* and *Lomaria Spicant* were seen. Mosses were plentiful, among them being the somewhat montane species, *Polytrichum urnigerum* and *Hypnum exannulatum*. The liver-wort (*Fegatella conica*), bearing male receptacles—the plant is dioecious—was abundant on the banks of the brook Westerham. The commoner tree-growing lichens were fairly

plentiful on the trunks of ash-trees at Limpsfield and Westerham, and a few saxicolous kinds, as *Squamaria murorum*, grew on tombstones in the churchyard at Oxted. A few tree-growing fungi, as *Polyporus fraxineus* and *Dædalia quercina*, were found.

August 5th (Bank Holiday).—Excursion to Shalford, Compton Church, and Watts's Memorial Chapel, Museum and Picture Gallery, and Guildford. Conductor, Mr. F. Campbell-Bayard, F.R.Met.Soc.

Several excursions having been previously made to various parts of the North Down, it was suggested that this one should be complementary to them, and especially to that made on Whit-Monday, 1906, from Gomshall *via* the Ridgeway, Newland's Corner, St. Martha's Chapel, and along part of the Pilgrims' Way to Guildford; therefore the route chosen was from Shalford, Pease Marsh, Loseley, Compton, and back by the Pilgrims' Way, under the Hog's Back, to Guildford. The day proved fine and warm, but only twelve members were able to attend. On arrival at Shalford, at 11.20, a few who travelled by the train named waited the arrival of the relief train, which brought some others; one member joining subsequently at Compton. The walk was over level ground across Pease Marsh, and until Loseley Park was reached was entirely on the in-lie of the Weald Clay. A brickyard on the way was visited, and the clay seen, but no fossils. Permission to pass through Loseley Park had been applied for some days before, but unfortunately the letter had not reached the proper quarters; the party was, however, allowed through when this was explained. At the entrance several clumps of bamboo which had been planted were noticed, and further on, near the house, some fine specimens of Spanish chestnut were much admired, the bark on one being very spiral. A view of the house, which dates back to 1564, was obtained, but no pause was made. On the road leading from the park were some fine lime-trees, the scent from which was delicious. The route then lay through fields to Compton Common, where the edge of the in-lie of Weald Clay was again passed. After lunching at the Harrow Inn, a visit was paid to the church, concerning which Dr. Hobson, who was unable to attend, has sent the following notes:—The oldest visible part is the tower, c. 1075. The nave, aisles, and chancel, c. 1160–1180. The capitals of the columns are Transition, and curiously carved. Arches two-centred. The most interesting parts of the church are in the chancel and anchorite's cell, separated from the chancel by a cruciform opening. The cell is now occupied by a wooden staircase leading to a gallery over the chancel. A round arch separates the chancel from the nave. In the south wall of the western part of the chancel is a curious

two-light window with square heads, and a squint formerly communicating with a chapel in east end of south aisle. The sanctuary is separated from the rest of the chancel by a low round arch with dog-tooth or zigzag moulding. It has a low vaulted roof, with four bowed ribs made of clunch, one of which shows an embedded flint. In the south wall are rounded aumbrey and piscina. There is a blocked round-headed doorway in the wall of the north aisle. The whole church is extremely interesting.

On leaving the church a visit was paid to the post-office, near which there is a fine half-timbered house, and thence to the cemetery and the chapel designed by Mrs. Watts, then to the picture gallery and the pottery works. After a pleasant walk on to Guildford, where tea was had, the party returned thence to Croydon.

March 23rd.—South Kensington British Museum Natural History. Conductor, Mr. H. T. Crosfield, B.A.

May 25th.—Cheam Brickyard, showing junction of London Clay and Woolwich Beds. Conductor, Mr. W. Whitaker, F.R.S. (See Geological Section Report.)

June 20th.—Beddington Sewage Farm. Conductor, Mr. G. W. Moore. (See Geological Section Report.)

July 6th.—Balcombe and Highley Manor. Conductor, Dr. Franklin Parsons.

July 20th.—Croham Hurst. Zoological Section. Conductor, Mr. H. D. Gower.

September 14th.—Fungus Foray, Gravelly Hill, Caterham. Conductor, Dr. H. Franklin Parsons.

Botanical Evening Rambles.—Three rambles were made on May 16th, June 20th, and July 18th, accounts of which appear in the Botanical Section Report.

EVENING MEETINGS.

February 19th.—Reading of Meteorological and Botanical Committees' Reports.

Mr. A. L. Lewis, V.-P. Royal Anthropological Institute, exhibited and described some lantern-slides of ancient stone monuments and circles.

March 19th.—Lecture by Mr. G. C. Druce on "Animal Sculpture in Churches," illustrated by lantern-slides.

April 16th.—Paper by Dr. T. A. Dukes, "The Ice Age: its Cause and Man, its Consequence."

May 28th.—The Hon. Secretary read a note on a previous

excursion to the Beddington Sewage Farm, in anticipation of a visit to be paid to the same place later on; and Mr. W. Whitaker, F.R.S., gave a short description of the brickfields at Cheam, visited on May 25th. (See Geological Section.)

September 17th.—Mr. A. L. Lewis, V.-P. Royal Anthropological Institute, read an account of a visit to Autun, France, with the Congrès préhistorique de France, at the Fifth Annual Meeting of which he represented the Croydon Natural History and Scientific Society.

October 15th.—Lecture by the Photographic Survey and Record of Surrey, read by Mr. W. Whitaker, F.R.S., illustrated by about sixty lantern-slides.

November 19th.—Lecture by Mr. E. Lovett, F.H.S., on “Alpine Scenery and Alpine Flora,” illustrated by a large number of excellent lantern-slides.

December 17th.—Paper by Mr. J. Edmund Clark, B.Sc., “The Coming of Halley’s Comet.”

An account was first given of the interesting personality of Edmund Halley, the son of a prosperous Winchester Street soap-boiler, and born at his rural residence at Shoreditch in 1656. The lad was easily “captain” at St. Paul’s School, and at Oxford contributed papers to the Royal Society while still in his teens. He perfected the sextant and diving-bell; first accurately charted stars of the southern hemisphere; first located the southern magnetic pole; first developed the relation for measuring heights by the barometer. Above all, by encouragement, assistance, and accepting all financial risk, he was responsible for the publishing of his friend Newton’s ‘*Principia*.’

In connection with this, he undertook the herculean task of reducing the orbits of the twenty-four comets that had been best observed. Three of these, seen in 1682 (and charted by himself), 1607, and 1531, he found to have such similar orbits that he declared them to be three appearances of the same body, and boldly prophesied its return in 1758, appealing to “candid posterity to acknowledge that this was first discovered by an Englishman.” He himself died in 1742, but the comet was again seen on Christmas Day, 1758.

Other comets of recent years were further described in order to indicate their appearance and probable nature. The heads consist of clouds of meteoric matter, portions of which, dropping behind along their orbits, produce meteor streams where such orbits cross that of our earth. The tails are formed of matter, probably gaseous, but at any rate of infinitesimal size, and consequently repelled by the action of the sun’s light. Such repulsion occurs with particles less than the $\frac{1}{40000}$ of an inch in

diameter. It is suggestive, for the possible cosmic universality of life, that the smallest known life-germs (those of pus) measure only the $\frac{1}{50000}$ of an inch.

Reports of Sections for 1907.

ANTHROPOLOGICAL & ARCHÆOLOGICAL COMMITTEE.

During the year there have been three meetings, which have all been well attended by those of our members interested in the subject, and it is most satisfactory to note the increasing interest being taken in this section.

The idea this year has been to rather extend the subjects under investigation, and a wider field has been taken, so that we have not been confined solely to local subjects.

The first meeting of the year was held on February 28th, and was devoted to the American Continent, and Mr. A. L. Lewis, Vice-President of the Anthropological Institute, read "Some Brief Notes and Queries on American Anthropology," and there was an exhibition of stone implements and other objects illustrating the subject.

On May 31st the evening was devoted to "Cornish Flint Implements and Probable Source of Supply," and a large number of specimens, plans, photos, &c., were brought. Mr. Lewis gave an explanation and showed a series of photos, drawings, and plans of various stone circles and cromlechs in the neighbourhood of Penzance, also a series of flint flakes from Dozmare Pool, near Bodmin. Mr. Tarver exhibited a series of flint implements, cores, and flakes from a neolithic site discovered by him at Polruan, near Fowey, together with photographs. Mr. Collyer sent an interesting series of flakes, &c., found on prehistoric sites at Harlyn Bay, and Miss Klaassen also brought photos of finds at the same place. Mr. Robarts showed photos of stone circles near Penzance, Mr. Hogg had two flint celts recently found at Worms Heath, and a visitor brought some implements of a palæolithic type found in South Africa.

The subject for the 26th of November was "Ancient Methods of Transport and Erection of Monoliths," &c. Mr. Lewis in support of this brought some models to scale, showing how large masses of stone were transported and erected by the natives in Northern India, it being carried on a sort of platform supported by poles on the shoulders of the carriers.* A large and varied number of exhibits were brought, Mr. Collyer contributing the bulk, including Esquimo weapons, tools, &c., of walrus ivory, a fine jade axe from New Caledonia, obsidian knives, arrow and spear-heads from Mexico, Chinese thumb rings of jade and other stone, also a powder tester and pistol tinder-box combined. Mr. Tarver showed a number of old prints of cromlechs, &c. Dr. Male, photographs of standing stones.

The section is indebted to Mr. Topley for the gift of photographs of recent finds of Anglo-Saxon remains from an Anglo-Saxon cemetery, discovered near Hordem Road, Mitcham.—ALFRED TARVER, Hon. Sec.

* It is interesting to note that these huge stones are set up as memorials by rich natives.

BOTANICAL COMMITTEE.

The Committee report that the evening meetings and excursions of the Section have been well attended during the past year.

In March a joint meeting was held with the Microscopical Section. In April a meeting was held to study the Society's Herbarium, when plants were brought for exhibition and identification. In May, June, and July evening excursions were made to places of botanical interest. In September the annual Fungus Hunt took place.

The Committee has continued the investigation of the commons in the neighbourhood of Croydon, recording notable plants, the disappearance of recorded species, and the occurrence of casuals. Members of the Section have exhibited living and dried plants at the ordinary meetings, and taken part in the Society's general excursions to record notable plants.

On March 21st, at a joint meeting of the Botanical and Microscopical Society, an address was given by Dr. Parsons on "Lichens," which was illustrated by specimens and micro-slides.

Lichens, according to the former view, are a group of plants of the sub-kingdom Thallophyta, *i.e.*, plants having no distinction between stem and leaves. They are distinguished from algae and fungi by their aerial habit of growth; algae being typically aquatic and fungi saprophytic, *i.e.*, growing on decaying organic matter, or parasitic on living plants or animals. Lichens are perennial and of long duration; they survive drying, and revive with moisture: frequently being different in colour when dry and when wet. They are of three principal types of growth, viz., *crustaceous*, adhering to objects such as stone and wood like a coat of paint; *foliaceous*, forming a flat frond different on the two surfaces, the under side being loosely attached to the objects on which it grows by means of fibres or rootlets: and *fruticose* or shrub-like; between these types, however, there are intermediate forms. Structurally the thallus consists of two elements, *viz.*, (1) the stroma, a tissue of interlaced fibre-like cells, the superficial layer being distinct, forming a cuticle; and (2) green chlorophyllous cells, called gonidia, interspersed among the stroma or forming a layer under the cuticle. To this structure the change of colour on wetting is due; when moistened, the stroma, like white paper, becomes more transparent and allows the colour of the green cells to be seen through it; hence many lichens which are grey when dry are greenish when moist. Grey is the commonest colour among lichens, but some are white, yellow, brown, or black; few are bright green. They frequently change colour on the application of chemicals, and these reactions afford distinguishing characters between the species. The colours yielded by lichens through chemical treatment were formerly much used in dyeing.

The true fructification of lichens consists of bodies called apothecia, differing from the thallus in texture and colour, being most frequently black or brown, but sometimes yellowish or red. They are of a waxy consistence, and vary in form and attachment, being sometimes terminal knobs, in other cases flat shields, or cups like the fungus *Peziza*, and in others immersed in the frond. On microscopic section they are found to consist of tubes (asci) containing spores in different stages of development, mixed with club-shaped threads (paraphyses), the structure closely resembling that of the ascomycetous fungi. In

addition to the apothecia, which in many species are rarely produced, lichens bear white powdery warts (soredia), the granules of which become detached and grow, forming the most common methods of reproduction.

According to the view of Schwendener, now generally adopted by botanists, lichens are not autonomous plants, but compounds formed by a fungus and a green unicellular alga living in mutually beneficial association, the fungal element being represented by the stroma and apothecia, while the gonidia are algae. The latter are capable of independent life, and form the green powder with which on the outskirts of towns the trunks of trees are often covered. Lichens, like other cryptogamous plants, are most abundant in moist mountainous and wooded regions, and especially on the western coasts of the British Isles. They are very intolerant of coal-smoke and sulphur acids—even more so than mosses—and very few species are found in the neighbourhood of towns. Near Croydon they are represented only by a few terrestrial species on our heaths, and by two or three common species on walls and trunks of trees. Farther away, on the North Downs, and in the lower and moister region beyond them, lichens are more plentiful, but not as in the West of England.

The following is a preliminary list of species observed near Croydon:—

- Cladonia furcata*.—Worms Heath, &c.
- C. coccinea*.—Kenley.
- C. pyxidata*.—Shirley Hills; Worms Heath.
- Cladina rangiferina*.—Shirley Hills; Keston Common; Reigate; Oxted.
- C. uncialis*.—Shirley Hills.
- Evernia prunastri*.—Marden Park, &c., on trees.
- Ramalina farinacea*.—Marden Park; Croham Hurst, &c.
- R. fraxinea*.—Leaves green.
- R. fastigiata*.—Chipstead; Marden Park; Limpsfield.
- Cetraria aculeata*.—Shirley Hill; Worms Heath; Oxshott.
- Platysma glaucum* (?).—Shirley Hills (formerly).
- Peltigera canina*.—Shirley Hills; Hayes and Keston Commons.
- Parmelia saxatilis*.—Shirley Hills; Hayes and Keston Commons; frequent.
- P. olivacea*.—Marden Park; Coulsdon, &c.
- P. caperata*.—Oxted; Chipstead; Chelsham.
- P. physodes*.—Shirley Hills; Worms Heath; Keston.
- Physcia parietina*.—Addiscombe; Chipstead, &c.
- P. ciliaris*.—Chipstead.
- P. pulverulenta*.—Oxted; Chipstead; Limpsfield.
- P. tenella*.—Hayes Common; Marden Park; Sanderstead.
- P. cæsia*.—Keston.
- Placodium murorum*.—Chipstead; Godstone; West Wickham.
- Lecanora subfuscata*.—Fairchild; Limpsfield.
- L. vitellina*.—South Croydon, on palings.
- Pertusaria communis*.—Marden Park, &c.
- Lecidea parasema*.—Chipstead.
- L. decolorans*.—Shirley Hills; Worms Heath; Oxshott.
- L. canescens*.—Addiscombe, &c.; common on elm-trunks, near the base.
- L. contigua*.—Oxted.

The Thursday evening rambles were as under (reports are by the conductors) :—

On May 16th an evening ramble was held at Addiscombe and there was a good attendance. Meeting at Dr. Parsons's, Park Hill Rise, the party went round his garden, where some interesting plants were in flower, and then, by kind permission of Mr. Bruce Johnson, visited the fields at the back of Woodbury, near the top of Radcliffe Road. Here there are some springs, issuing from the junction of the Old-haven Pebble Beds and Sands and the Woolwich Clays, which formerly constituted the source of water supply to Addiscombe College. Around these springs is a patch of swampy ground in which a number of marsh plants grow. Among them may be mentioned the marsh-marigold, ragged-robin, *Stellaria uliginosa*, *Apium nodiflorum*, water-betony, brooklime, water-mint, and several willows. On the prostrate trunk of one of the latter, the scale-moss, *Lophocolea heterophylla*, was found. In the adjoining field the meadow saxifrage, *S. granulata*, occurs; this formerly grew on a bank adjoining the Addiscombe Road, but the station has been recently destroyed in widening the road. In the railway cutting between Radcliffe Road and Park Hill Rise some other plants were found, including the lamb's-lettuce (*Valerianella olitoria*), *Aira præcox*, and the horse-tail (*Equisetum arvense*), with its brown fertile stems and cones. Altogether about forty-six species of plants were noticed.

On Thursday the 20th June an evening ramble was arranged, under the leadership of Mr. H. T. Mennell.

The party met at the South Croydon Station and numbered twenty-three. The evening, happily in this inclement season, was fine and reasonably genial.

The route taken was by Croham Road and Ballard's Lane to the Addington Hills.

Potentilla argentea, *Scleranthus annuus*, and several grasses, including *Aira caryophyllea* and *Poa nemoralis*, were noted by the way. The wood-sanicle (*Sanicula Europæa*) was very conspicuous in the woods, where also *Listera ovata* and *Euphorbia amygdaloides* were gathered.

By the kindness and courtesy of Fred. A. English, Esq., the proprietor, free access was granted to Addington Park.

The party made its way first to the vineyards, to which their attention had been specially drawn by Mr. English. They have been established now for three years, on the warm and sheltered southern slopes bordering on the road from Addington Hills to Addington Village. They have been a special interest and hobby of Mr. Devenish, Mr. English's nephew. Vine-dressers and cultivators were brought from France to superintend the planting and pruning of the vines. The vineyards now cover about eight acres, and we understand that the proprietor is well satisfied with the result, the crop last year (1906) having been excellent. In the vineyard *Thlaspi arvense* and *Sherardia arvensis* were noted.

Thence the party regained the higher portion of the park, the continuation of the ridge of Addington Hills; the views on every side were most beautiful. They crossed the park, just getting a view of the mansion, and made for the swan-pond. On both sides of the road, and on the slopes on either hand, the rhododendrons were now in full bloom,

and presented a sight of marvellous beauty. Those who knew the park in former years, when it was the residence of the Archbishop, were struck by the marvellous display, far exceeding anything they had seen in the past.

Immediately round the pond the scene was especially striking; a greater variety of colour and tint in the rhododendrons is found here, and the shrubs are of great size and covered with bloom, being reflected in the waters of the pond.

Ascending the slopes in the wood by a steep path and rude staircase, the party were able to look down upon the scene below and take in a more extensive view of the pine-woods in the park through which they had passed.

Dr. Parsons has kindly furnished me with a list of the plants observed, from which I take the following:—

On sandy ground at the top of the hill: *Ornithopus perpusillus*, *Potentilla argentea*, *Alchemilla arvensis*, *Sedum acre*, &c.; and in the boggy ground near Shirley Church Road: *Viola palustris*, *Hydrocotyle vulgaris*, *Scutellaria minor*; and many mosses and hepaticas, *Sphagnum acutifolium* being especially luxuriant.

July 4th, 1907, excursion to Mitcham Junction and Carshalton.

The inclement weather prevented several from coming, but eleven in all took part in what proved to be a very enjoyable walk, under the guidance of Mr. J. E. Clark.

As it was proposed to avail ourselves of the opportunities for studying the water-flora, a visit was first paid to the large pond across the road from the station, and its interesting contents were examined. Then the Wandle was reached by Beddington Corner, and partially followed to Ruskin's Spring at Carshalton, *via* Green Wrythe Lane. A list of some of the plants noted, drawn up by Dr. Parsons, is appended. We did not make any addition to the extensive list compiled by Mr. Alfred Bennett. Among other fine timber, attention may be called to some splendid specimens of willow opposite the leather works at Beddington Corner. Reasons for the two names, *Salix alba* and *S. fragilis*, were pointed out, especially the curious fracture at the joint of side-stems which gives rise to the latter. We returned by the Sutton trams, some of the party having used the other new and convenient tram extension to Mitcham for the out-going journey.

Galium palustre, *Myosotis palustris*, *Ranunculus trichophyllus*, *R. Flammula*, *Oenanthe fistulosa*, *Lemna trisulca* and *minor*, *Equisetum limosum*.—Pond on common near Mitcham Junction.

Nasturtium palustre, *Oenanthe crocata*, *Sium angustifolium*, *Potamogeton densus*, *Glyceria aquatica*, *Digraphis arundinacea*.—River Wandle, Beddington Corner.

Hyoscyamus niger, *Epilobium tetragonum*, *Raphanus Raphanistrum*.—Fallow field near Carshalton.

Pulicaria dysenterica, *Epilobium hirsutum*, *Sison Amomum*, *Humulus Lupulus*.—Green Wrythe Lane.

The fungus *Auricularia mesenterica* was found on a stump between Beddington Corner and Green Wrythe Lane.

On September 14th an afternoon excursion was made, under the leadership of Dr. Parsons, to Caterham and by Harestone Valley to Gravely Hill, and was well attended. The special object of the

excursion was fungi which, in spite of the somewhat unfavourable season, were plentiful in the moist woods on the chalk near Gravely Hill; but a number of interesting flowering-plants were also observed, of which the following may be mentioned:—

Senecio crucifolius, *Chlora perfoliata*, *Gentiana Amarella*, *Mono-tropa hypopitys*, *Campanula trachelium*, *Echium vulgare*, *Daphne Laureola*, *Epipactis latifolia*, *Cephalanthera pallens*; also *Lastrea Filix-mas*, and *L. dilatata*.

Of fungi some forty-three species were found, several of them being of kinds different to those found in the woods and heaths on the Tertiary Gravels, to which former excursions had been made. Among the noteworthy species found were:—

Agaricus (*Amanita*) *Cæciliae*, *A.* (*Nolanea*) *pascuus*, *A.* (*Pholiota*) *mutabilis*, *Cortinarius callochrous*, *C. collinitus*, *C. tophaceus*, *Lactarius volenum*, *L. fuliginosus*, *L. pyrogalus*, *L. hysgynus*, *Russula rubra*, *R. vesca*, *R. virescens*, *Polyporus medulla panis*, *Hydnnum repandum*, *Clavaria pistillaris*, *C. formosa*, *C. cristata*, *C. grisea*, *Lycoperdon echinatum*, *Ustulina vulgaris*.

The number of plants recorded for the commons near Croydon is:—

	1906.	1907.
Hayes and West Wickham Commons	344	347
Keston Common	277	280
Shirley Hills	193	195
Croham Hurst	256	256
Mitcham Common	462	462
Riddlesdown	186	187
Worms Heath	67	90
Farthing Down	108	109

Purley Beeches having been recently acquired as an open space by the Sanderstead Parish Council, it is proposed to compile a list of the flora of this area. Lists have already been commenced of the plants of Alderstead Heath (Chaldon) and Park Downs (Banstead), and Banstead Downs and Kenley and Coulsdon Commons are other open tracts for which it is desirable that the same should be done.

During 1907 the following less common plants have been observed in the neighbourhood of Croydon:—

Ranunculus sceleratus.—Beddington.

Papaver somniferum.—Keston.

P. Rhoæas.—Variety without black blotches on petals; Keston.

P. Rhoæas.—Variety with pink petals with white blotches; Keston.

P. Argemone.—Hayes; gravel-pit.

Nasturtium palustre.—Beddington.

Lepidium ruderale.—Hayes; gravel-pit.

Cerastium arvense.—Chipstead Valley.

Potentilla procumbens.—Lock's Bottom.

Rosa tomentosa.—Keston.

R. micrantha.—Riddlesdown.

Epilobium obscurum.—Lock's Bottom.

Apium inundatum.—Chelsham.

Matricaria Chamomilla (rayless form).—Lock's Bottom.

Anthemis tinctoria (casual).—Hayes; gravel-pit.

Centaurea caliitrapa.—Kenley.

- Chicorium intybus*.—Hayes; gravel-pit.
Crepis taraxacifolia.—Beddington.
Vinca minor.—Sanderstead.
Lithospermum officinale.—Fairchild.
Myosotis cæspitosa.—Chelsham.
Mentha Pulegium.—Chelsham.
Lysimachia punctata (casual).—Hayes; gravel-pit.
Rumex Hydrolapathum.—Chelsham.
Euphorbia Cyparissias (casual).—Chipstead Valley.
Carex muricata.—Keston.
Lastrea dilatata.—Sanderstead.

FUNGI.

- Panus conchatus*.—West Wickham.
Polyporus picipes.—St. Paul's Cray Common.
Peziza succosa.—Crofton.

Helotium conigenum.—Shirley Hills

Peziza aurantia, which formerly occurred plentifully every autumn on banks in Coombe Lane and at Shirley, but has not been seen there for several years past, was found this year at Crofton and Kenley.

The following list of *Hepaticæ* is supplemental to that given in the Report of the Botanical Section for 1905:—

- Fegatella conica*.—Westerham.
Lepidozia reptans.—Godstone; Shirley Hills.
Cephalozia connivens.—Oxshott Heath.
Scapania nemorosa.—Keston Common.
Plagiochila asplenoides.—Coulsdon; Box Hill.
Jungermannia (Apolozia) crenulata.—Oxshott Heath.
J. (Lophozia) ventricosa.—Shirley Hills.
Fossombronia pusilla.—Holwood Park.
Aneura multifida.—Holmwood Park: Hayes.

CORRECTION.—*Ulex Galii*, recorded in our Report for 1906 as having been found at the Weybridge excursion, is stated by Mr. C. E. Salmon, upon an examination of a specimen, to be undoubtedly *U. nanus*.

Mr. C. E. Salmon, F.L.S., records in Surrey:—

Reseda Phyteuma.—Growing with *R. lutea*, various *Fumariæ* including *F. Vaillantii*, *Ajuga chamaepitys*, &c., in a rough chalky field at Betchworth, on the slope of the Downs. Probably accidentally introduced, but in some quantity.

Tilia platyphyllos.—By lane-side on the slope of Buckland Hill, looking native (H. W. Pugsley & C. E. S.).

Medicago maculata.—By roadside between Boxhill and Burford Bridge (A. B. Jackson & C. E. S.).

Epilobium roseum.—By the Gad Brook, south of Brockham Park.

Galium Tricorne.—Pilgrims' Way, Reigate.

Valeriana Mikaniæ.—Clandon Downs.

Pulicaria vulgaris.—Norley Common, Wonersh, plentiful (A. Wallis & C. E. S.).

Onopordon Acanthium.—Gravel pits near Burford Bridge (A. B. Jackson & C. E. S.).

Melissa officinalis.—Cottage hedgebank near Brockham Park.

Salvia pratensis.—I think this may fairly claim to be considered a

native on the Downs near Reigate, where it is very scarce but scattered over a small area. It rarely flowers.

Polygonum Convolvulus var. *alatum*.—Betchworth (A. Wallis & C. E. S.).

Polygonum minus and *maculatum*.—Norley Common, Wonersh, plentiful (A. Wallis & C. E. S.).

Euphorbia platyphyllos.—Cultivated ground near Earlswood.

Euphorbia exiqua var. *retusa*.—Cornfield near Clandon Downs.

Betula verrucosa.—Boxhill near Burford Bridge (A. B. Jackson & C. E. S.).

Betula pubescens.—Mickleham Gallops (A. B. Jackson & C. E. S.).

Ophrys arachnites.—I should be glad to hear if any Surrey botanist can throw any light upon Prof. Forbes's plant of Buckland Hill (see Brewer's 'Flora'). Plants of *O. apifera* with the lower lip more flattened than usual and with a projecting label do occur there.

WINTER FLOWERS.—The following plants were in flower on Christmas Day, 1907, in Mr. Mennell's garden, Park Hill Rise, Croydon.—*Clematis* (large white), *Helleborus albaefolius*, *Iberis coriifolia*, *Arabis albida*, yellow wallflower, *Viola odorata* (abundant), Pansies, *Rosa bracteata*, Roses (three or four various), *Jasminium nudiflorum*, *Laurustinus*, *Megasea cordifolia*, *Heuchera cordata*, Carnations (white), Wild Strawberry, *Melilotus* (tall yellow), *Linum arboreum*, *Scabiosa atropurpurea* (two or three colours), *Helochrysum* (everlasting, several colours), *Rudbeckia*? Snapdragon, Primrose, *Polyanthus* (various). Total twenty-three kinds, not including varieties.

In Dr. Parsons's garden the following additional plants were in flower.—*Dianthus* (Napoleon III.), *Helleborus lutescens*, *Petasites fragrans*, *Calendula officinalis*, *Saxifraga apiculata*, *Erica carnea*, *Sternbergia lutea*, *Crocus speciosus*, *Primula Auricula*.

Dr. Parsons gives the following remarks on the weather of 1907, in relation to vegetation.

The weather during 1907 has presented some very peculiar features, especially the cold cheerless summer and the prolonged mildness of the autumn; in illustration of which it may be mentioned that at the official station in St. James's Park, London, the highest shade temperature of the year was 80° on September 25th, and that the screen thermometer did not go below 32° F. between March and the end of December. Contrary to the common impression the year was a dry one, at least in the south-east of England. The rainfall at Park Hill Rise, Croydon, was just under 22 (21.97) in., nearly two inches below the average of the preceding fourteen years, viz. 23.82 in. The only months in which the average fall was exceeded were April, October, and December, and in the two latter months the excess was only slight. The heaviest fall in the year on any one day was 1.20 in. on June 1st. Excluding this, the rainfall for the four months, June, July, August, and September, was only 3.81 in. against 8.04 in., the average of the fourteen previous years, or less than half. But the days on which rain fell during this period were forty-nine, as against forty-six, the average during the corresponding period of the previous fourteen years; and the total number of rainy days for the whole year was one hundred and sixty-eight or about the fourteen years' average, one hundred and sixty-seven. Hence in spite of the total deficiency of rainfall, the frequent showers combined with the cool cloudy summer

to prevent anything like drought to check vegetation. The mean temperature of the year was about the average, the deficiency in the summer being compensated for by the excess in other months. January began with a heavy rainfall on the 1st, on the break-up of the frost with snow in the end of December, 1906. Except for this, January and February were cold and dry, with occasional frosts, but no long spell. Vegetation was very backward in starting growth, thus the winter aconite and snowdrop (*G. nivalis*), which in 1906 were in flower on January 4th and 6th, in 1907 did not open till February 12th and 13th respectively. Other early spring flowers were similarly late in their appearance and the season may be considered the most backward since 1895, the year of the long frost (See Table at end). March was very fine and dry with many bright cloudless days and warm sunshine, but frosty nights. April and May on the other hand were cold and showery. The summer months as already said were cold and dry. The thermometer on the grass on July 10th went down to 31° F., a frost in July being in our experience an almost unprecedented occurrence. Indeed, June and August were the only months in which a temperature at or below 32° on the grass was not registered. Contrary to what might have been expected, however, the summer was a favourable one for vegetation; the gardens were never more gay with flowers, and the crop of fruit, especially apples and plums, was very large. Probably the cold weather in the early spring months may have had the beneficial effect of retarding the flowering of the fruit trees until the spring frosts were over. The wheat crop was a good one and the hop-crop, although unequal, was a fair one in many places. Potatoes which had previously looked healthy were suddenly attacked with disease in the middle of September.

Fungi, including mushrooms, were scarce in most situations; no doubt owing to the cold dry weather of the summer months, but they became more plentiful later in the autumn. Haws were plentiful, but there were no sloes, and many holly trees were without berries.

The autumn was singularly free from frosts, and dahlias and other tender plants remained in flower in gardens until the end of November; indeed the foliage where it was allowed to remain was not killed by frost until the end of December.

The year was on the whole a remarkably healthy one, owing no doubt to the absence of extremes of heat and cold; the death-rate in 1907 having been the lowest on record. It may be noted that contrary to the popular belief which connects the summer prevalence of diarrhoea with the plum season, the mortality from that disease in London was exceptionally low, although plums were selling in the streets at a penny per pound.

DATES OF APPEARANCE OF EARLY SPRING FLOWERS.—The following list shows the dates of flowering of certain garden species at Park Hill Rise, Croydon, in 1907, as compared with 1906 and the thirteen previous years, 1893–1905.

	Avgre. 13 yrs.	1906.	1907.
<i>Eranthis hyemalis</i>	Jan. 15	Jan. 4	Feb. 12
<i>Galanthus nivalis</i>	„ 22	„ 6	„ 13
<i>Erica carnea</i>	„ 25	„ 18	Jan. 2
<i>Crocus aureus</i>	Feb. 8	„ 18	Feb. 17
<i>Leucojum vernum</i>	„ 18	„ 27	Mar. 3
<i>Scilla bifolia</i>	„ 13	„ 29	Feb. 20

	Avrge. 13 years.	1906.	1907.
<i>Anemone blanda</i>	Feb. 24	Feb. 15	Mar. 17
<i>Dondia epipactis</i>	„ 20	„ 25	„ 21
<i>Iris reticulata</i>	„ 28	„ 25	„ 14
<i>Narcissus minimus</i>	„ 25	„ 26	„ 17
<i>Saxifraga apiculata</i>	„ 26	Jan. 28	„ 20
<i>Saxifraga oppositifolia</i>	Mar. 6	Mar. 7	„ 24
<i>Chionodoxa Luciliae</i>	„ 3	Feb. 27	„ 16
<i>Daphne Mezereum (red)</i>	„ 9	Mar. 12	„ 28
<i>Arabis albida</i>	„ 21	„ 18	April 1
<i>Forsythia viridissima</i>	„ 8	Feb. 22	Mar. 21
<i>Ribes sanguineum</i>	„ 22	Mar. 18	April 13
<i>Iris pumila</i>	Apr. 11	Apr. 22	May 8

The following thirty-four flowers—besides ten varieties of rose—were in bloom at "Asgarth," Riddlesdown Road, Purley, during Christmas week, whilst a week before an apple tree had blossom:—*Veronica rupestris*, Snapdragon, Double Colchicum, Cumberland Blackberry, Arbutus, Yellow Jasmine, Yellow Barberry, *Berberis Darwinii*, Lavender, Thyme, Aubrieta, Double White *Arabis*, Yellow Alyssum, Sweet Alyssum, Nasturtium, Canariense, Violas (various), Pansies (various), Perennial Candytuft, Marguerite Carnation, Strawberry, Greater St. John's Wort, *Aster horizontalis*, Valerian, Primrose, Polyanthus, Auricula, Sweet Violet (Persian), Cornflower, Ten-weeks' Stock, a creeping blue Campanula, Leopard's Bane, Wallflower, Chrysanthemums.

The list for the whole of December totals to forty-nine besides roses, of which at least twenty kinds were still blooming on December 1st. The profusion, also, of chrysanthemum, polyanthus, pansy and viola was as usual. The snowdrop *Elwesii* appeared with January, just after the above record closes.

Of sixty species of wild flowers noted during December, the following forty-five were still blooming in Christmas week. With greater opportunity of observation the number might no doubt have been largely extended:—*Ranunculus repens*, *Erysimum cheiranthoides*, *Brassica sinapistrum*, *Brassica campestris*, *Capsella bursa-pastoris*, *Reseda lutea*, *Viola tricolor*, *Lychnis vespertina*, *Arenaria serpyllifolia*, *Cerastium vulgare*, *Stellaria media*, *Ulex europaeus*, *Ulex nanus*, *Geum urbanum*, *Rubus fruticosus* (4 in fruit), *Æthusa cynapium*, *Heracleum sphondylium*, *Daucus carota*, *Bellis perennis*, *Matricaria inodora*, *Achillea millefolium*, *Senecio vulgaris*, *Senecio Jacobæa*, *Carduus lanceolatus*, *Carduus arvensis*, *Hypochaeris radicata*, *Sonchus arvensis*, *Sonchus oleraceus*, *Taraxacum dens-leonis*, *Crepis virens*, *Erica cinerea*, *Calluna vulgaris*, *Myosotis arvensis*, *Veronica agrestis*, *Lamium purpureum*, *Lamium album*, *Rumex crispus* (? *obtusifolius*), *Euphorbia helioscopia*, *Euphorbia exigua*, *Euphorbia peplus*, *Agrotis setacea*, *Hordeum murinum*, *Lolium perenne*, *Dactylis glomerata*, and *Poa annua*.

Noteworthy is the abundance of *Matricaria inodora*, thistles, and other composites. The twelve species noted above compare with nine composites seen last year, out of a total, then, of thirty-seven. The difference in the two seasons probably depends more on the summer and early autumn than the end-of-the-year conditions. The latter were not unlike. But whereas the heat of the summer and early

autumn in 1906 caused plants to "flower out" early, the coolness of this period in 1907 left large numbers still in bloom. Not only was the blackberry in flower, but fruit was still ripening. The list contains no true "spring" flower, unless the gorse is reckoned as such.—
J. EDMUND CLARK.

GEOLOGICAL COMMITTEE.

The Geological Committee report that regular meetings have been held from January to May, and September to December, on the second Tuesday in each month, which were on the whole well attended. Mr. G. W. Moore kindly undertook the secretarial duties during Mr. Clarke's temporary absence abroad. At the meetings a number of interesting specimens were exhibited by the members. Several sections were opened in the chalk in the course of drain laying. The cutting from Croham Manor Road to Croham Hurst was carefully worked by Mr. G. J. Hinde, Ph.D., F.R.S., F.G.S., and Mr. F. Gosling, B.Sc., F.C.S., with the result that Marsupites was found. Details of this section will be found in the report by these gentlemen. (See Trans., Art. 26.)

Excursions were made on the 25th of May, 1907, to Cheam in the evening, and to Beddington Sewage Farm on June 28th, reports on which are subjoined:—

Excursion to Cheam, May 25th, 1907.—At the evening meeting on May 28th, Mr. Whitaker, F.R.S., gave a short account of the visit to some brickyards at Cheam, situated about half-a-mile to the north of the railway. Two pits were visited, situated in the Woolwich and Reading Beds. The slope of the ground is towards the north nearly corresponding to the dip of the strata. In the first pit visited a section was seen as follows:—At the top patches of gravel followed by a band of Mottled Clay with a band of Greenish Sand succeeded by a thicker bed of Mottled Clay, in all about thirteen feet thick, resting on the top of the Thanet Sands, of which nearly two feet were exposed. The total depth of the pit was about thirty feet. In the Mottled Clay some small septarian concretions were found, and strangely in the Green Sand some small green-coated flints, similar to those always found at the base of the Thanet Sands, but clearly not derived from or having any connection with these. Some of the true green-coated flints were found on the surface, but these were evidently derived from the destruction of the Thanet Sands which crop out at the surface a few yards to the south, and formerly extended over the chalk, outliers still existing at Headley and other places. No fossils were found.

The next pit visited was about three hundred yards to the east. It presented similar features, but the layer of sand in the Mottled Clay was more pronounced, in one place on the east side being fully three feet thick and much whiter. There the Thanet Sands were not reached, the bottom of the pit being in the Mottled Clay which was full of bright red markings of iron or manganese. At the entrance to this pit, however, on the north side, the junction of the overlying London Clay with the Woolwich Beds was seen marked by a band of comminuted oysters shells; no other fossil or sharks' teeth were seen, nor was there any appearance of selenite. In the first brickyard which is not now worked the London Clay appears at the northern end, but the junction with the underlying Woolwich Beds was obscured, though

the position was made out. The excursion was specially interesting from a stratigraphical aspect. Before returning many of the members of the party were kindly entertained to tea by Mrs. Bigsby, of Sutton.

Beddington Sewage Farm, June 20th, 1907.—Having been informed that some excavations were being carried out at Beddington Sewage Farm similar to those in 1900, when after passing through surface river gravels, clay, and sand, a bed of hard calcareous sandstone was discovered at a depth of seventeen feet, a short account of which is given in the Geological Committee Report published in the 'Proceeding' for 1901, p. lxx, a visit was arranged for Tuesday, June 20th, by permission of the borough engineer, who kindly arranged with the manager of the works, Mr. Holmes, and the manager of the farm, Mr. Grimwood, to show the party all that was being done.

The actual excavations being made were found to be about a hundred feet only to the north of the former, and were for the purpose of making filtering beds, the digging having been carried to a depth of from twelve to thirteen feet, but though similar beds were met with as previously, no hard stone bands were met with until a trench running due north and south was dug and at a depth of thirteen and a half feet the bed was found, with an average thickness of about eight inches. The difference in the level is due to the dip of the bed being towards the north. In the course of the trench the bed was lost but again found at a depth of thirteen feet. The rock consisted of a coarse grey, calcareous grit containing the following fossil shells: *Unio*, *Melania*, and *Paludina* with carbonised fragments of wood. It is in the Woolwich and Reading Beds.

The surface of the fields at the farm consists of the Wandle River Gravel, coarse subangular flints, but at about a hundred yards to the south-west of the present excavations a bed of alluvium was found about four feet thick in a depression, evidently the site of an old pond. In the gravel in a field on the other side of Beddington Lane from the farm while digging out gravel some human bones had been found, consisting of two skulls, a thigh bone, and other fragments, together with deer antlers. Mr. Holmes stated that the site had evidently been used for burials, as there was evidence of actual graves. The bones which were in a shed at the works were photographed.

While showing the party over the works Mr. Holmes explained the system of filtering by pumping up the liquid sewage and spreading it over the beds by means of pipes, which were made to revolve on the turbine principle over the filter beds.

Note of Excavations at Beddington Sewage Farm, May 28, 1907.—The Hon. Secretary read a note on the excavations at the Beddington Sewage Farm, made in the autumn of 1900, during which two bands of hard rock containing freshwater shells—*Paludina*, *Unio*, *Cerithium*, *Melania*, a fish bone, also plant remains, fossil-wood, and leaf impressions—were found. The existence of these bands in the Croydon representative of the Woolwich Beds was not known until this discovery was made, though they exist also in the railway cutting at Sundridge Park, near Chiselhurst, and in the Stroud Green well section.

At the present time some further excavations are being made at the farm, but on personal enquiry on May 18th it was stated that there was no intention at present to carry them to so great a depth, and that fourteen feet was the utmost they had at present reached. Beneath the

top layer of river gravels (Wandle) some Clay (Mottled) had been found, but nothing approaching the former find, though the manager promised to give information if anything of interest was discovered. The present working was stated to be a hundred yards south of the former, and as the dip of the strata is towards the north it is still possible that the hard rock found in 1900 may yet be discovered at a less depth than then.

MICROSCOPICAL COMMITTEE.

During 1906 some very interesting meetings have been held by this section, all of which have been well attended. The subjects discussed have included pond life, shore life, mosses, and the microscopic structure of plants. Two of these meetings were held jointly with the Botanical and Zoological Sections, as it was wiser to join forces where possible, so as to lessen the number of meetings. Our meetings usually take place on the Saturday following the Ordinary Monthly Meeting.

MUSEUM COMMITTEE.

The Museum Committee met once during the year, three members being present. The Committee regret to report that there have been very few specimens lent to the Loan Museum during the past year. It was hoped that members of the Zoological Section would have lent some entomological and other specimens, but this has not been done. The Committee desire to invite members to come forward during the ensuing year with loans of local objects, as much interest is taken in the Society's collection at the Free Library by those who make use of the library and reading-room.

The Croydon Education Committee are desirous of borrowing further specimens from the Carpenter Collection to place in the Elementary Schools' Museum, and the Committee propose to make further loans for this purpose.

The Committee wish to draw attention to the great need there is for a Public Museum of local objects in the centre of the town for educational purposes, and recommend the Council to do all that is in their power to bring about the establishment of such a museum without interfering in any way with the Corporation's Museum at Grange Wood.

ZOOLOGICAL COMMITTEE.

This section, which was revived in the autumn of 1906, has held several meetings during the past year.

On January 25th Mr. Parker exhibited one or two disarticulated specimens of Echinoderms, and so much interest was shown that the next meeting on February 22nd was devoted entirely to the phylum *Echinodermata*, which was introduced by Dr. Franklin Parsons, who exhibited specimens of most of the chief divisions of the group.

On March 23rd an excursion was made to the Natural History Museum, South Kensington, conducted by Mr. H. T. Crosfield.

On April 26th a joint meeting was held with the Microscopical Section. Mr. E. A. Davies introduced the subject of microscopic pond life, and described the various exhibits which he had kindly arranged under the microscope. These included *Paramœba*, *Englena*, some species of coccus, and the larva of a fly, which was very beautifully

exhibited in a compressorium to show the heart and vessel and the chief parts of the alimentary canal.

Dr. Dukes exhibited water containing *Paramæcium*, *Vorticella*, various diatoms, cocci, &c., in the living state.

Bad weather necessitated the postponement of an excursion to Oxted to look for birds under the leadership of Mr. Chas. Bentham.

On July 20th Mr. H. D. Gower conducted a small party to look for Mollusca in the neighbourhood of Croham Hurst.

At a meeting held on September 27th, Dr. Dukes, with the aid of a grass snake (*T. natrix*) and a mechanical contrivance, endeavoured to show the mode of progression adopted by snakes. For the same purpose Dr. Dukes also exhibited a fine "glass-snake" (*Ophisaurus apus*), a true lizard, belonging to the Anguidæ, having features in common with our slow-worm (*Anguis fragilis*). Mr. Stanley Hall showed a couple of young Mexican axolotls.

On November 29th Mr. Chas. Bentham gave a very instructive account of his observations of some of our British birds, which were illustrated by his own photographs. Chief interest centred in what is now one of our rarest of birds, the Hen-harrier. Mr. Bentham has had the good fortune to place on record the breeding of these birds during the past year near Frensham Ponds, and has secured excellent photographs of the nest, eggs, and young. The previous instance of these birds breeding in Surrey was noted some forty or fifty years ago, the record of which is very incomplete.

Donations to the Library, 1907.

From Individuals.—Guide to St. Olave's Church, Hart Street (B. Corcoran, Esq.); The Museum Gazette (E. W. Swanton); Nature Notes (W. Whitaker); Three reprints from the Journal of Botany (C. E. Salmon); Sundry Geological Problems (G. Henriksen); The Flora of Shetland (W. H. Beeby); Prehistoric Man (W. F. Stanley); Palæolithic Vessels of Egypt (R. de Rustafjaell).

From Societies.—The Photographic Journal; Journal of the Manchester Geographical Society; Journal of the Royal Microscopical Society; The Hastings and East Sussex Naturalist; Bulletin of the Geological Institution of the University of Upsala; Journal of the Quekett Microscopical Club; Proceedings of the Scottish Microscopical Society; The Rochester Naturalist; Proceedings of the Academy of Natural Sciences, Philadelphia; The Missouri Botanical Garden, U.S.A.; Proceedings of the Belgian Microscopical Society; Report and Transactions of the Manchester Microscopical Society; History of the Berwickshire Naturalist Club; Journal of the City of London College Science Society; Proceedings of the Ashmolean Natural History Society, Oxford; British Association Meeting, 1906; Journal of the Northants Natural History Society and Field Club; Report of the Yorkshire Philosophic Society; Bulletin of the Lloyd Library, Cincinnati; Proceedings of the Holmesdale Natural History Club; Ten Publications and Guides to the British Museum (Natural History); Annual Report of the Horniman Museum and Library; Transactions of the Eastbourne Natural History Society; Transactions of the Hertfordshire Natural History Society; Report of the Treasure Trove Committee of the South Eastern Union of Scientific Societies; The South Eastern Naturalist; Transactions of the Norfolk and Norwich Naturalists' Society.

Croydon Natural History and Scientific Society.—Receipts and Expenditure for the year ending 31st December, 1907.

Receipts.	£ s. d.	Payments.	£ s. d.
January 1.	0 12 6	January 1.	35 1 0
To Subscriptions received for 1906 ..	0 10 0	By Balance due Treasurer ..	35 1 0
Metropolitan Water Board for 1906 ..	..	December 31st.	
Balance transferred to the Special Fund ..	..	By Rent of Club Room ..	10 0 0
Account by instructions of the ..		Hire of Rooms for Meetings ..	4 10 0
Council (February 19) ..	..	Cost of Printing 'Transactions' ..	20 6 6
Subscriptions received in 1906 ..	..	Postages on 'Transactions' ..	1 5 11
" " 1907 ..	..	Printing Rainfall Returns (September, ..	21 12 5
" " Donations and Subscriptions received on ..	..	1906, to August, 1907), and sundries ..	34 15 2
account of Meteorological Section—		Photographic Section—	
Baldwin Latham, Esq. ..	5 5 0	Rent of Dark Room ..	8 0 0
F. Campbell-Bayard, Esq. ..	5 5 0	Subscription to Royal Photographic ..	
Earl Stanhope ..	1 1 0	Society ..	1 1 0
H. Rogers, Esq. ..	1 1 0	Postages, Lectures, &c. ..	1 9 5
Capit. Carpenter ..	1 0 0	Botanical Section—	
J. C. M. Stanton, Esq. ..	1 0 0	Postages, &c., ..	0 2 7
D. W. Horner, Esq. ..	0 10 6	Subscriptions to—	
J. E. Clark, Esq. ..	0 10 0	S.E. Union of Scientific Societies ..	0 10 0
Lt.-Col. C. N. Kidd ..	0 10 0	Commons and Footpaths Preservation ..	
Dr. H. Franklin Parsons ..	0 10 0	Society ..	0 5 0
F. D. Outram, Esq. ..	0 7 6	Society for Protection of Birds ..	0 5 0
W. Wagstaffe, Esq. ..	0 2 6	Photographic Survey of Surrey ..	0 5 0
East Surrey Waterworks Co. ..	1 1 0	Printing Monthly Circulars and ..	
Metropolitan Water Board ..	0 10 0	Postage on same ..	9 14 2
Underground Water Preservation Assoc. ..	0 10 0	Secretary and Treasurer's Stationery ..	
Borough of Croydon ..	0 10 0	and Postage Account ..	5 5 8
Croydon Rural District Council ..	0 10 0	Fire Insurance ..	1 2 6
Borough of Wimbledon ..	0 10 0	Gratuity ..	0 5 0
Sutton and District Waterworks Co. ..	0 10 0	Assistant Secretary ..	3 15 0
Donation from W. F. Stanley, Esq. ..	0 10 0		
Sales of 'Transactions' ..	0 6 0		
Donations to Photographic Section—			
J. G. Lincoln, Esq. ..	1 1 0		
R. W. Brant, Esq. ..	1 0 0		
F. J. Townend, Esq. ..	0 10 6		
Rent of Lockers ..	0 5 0		
Dividends on Life Membership Investment (£10 19s. 6d. Consols) ..	0 5 4		
Balance due Treasurer ..	1 14 1		
		£137 18 11	

SPECIAL FUND ACCOUNT.

£186 9s. 0d. CONSOLS.

	Debits.	£	s.	d.
January 1.				
To Balance		
Dividends		
		42	0	0
		4	13	0
<u>£46 13 0</u>				

BALANCE SHEET.

January 1, 1907.

To Balance of Special Account ..	..	..	..	..	..	..	..
Subscriptions received for 1908	..	..	..	..	..	..	..
	2	10	0	10	10	10	10
£15 0 8							

We, the undersigned, having examined the books of the above Society, also the accounts and vouchers relating thereto, certify the above are properly drawn up so as to exhibit a true and correct view of the Society's affairs.

H. J. TOWNSEND, Hon. Treasurer.

6th January, 1908.

N.B.—There is still due to the Society for unpaid Subscriptions for the year £4 12s. 6d.

GEO^RE. J. HINDE, } *Hon. Auditors.*
W. W. TOPLEY, }

President's Address.

A CHAPTER IN THE HISTORY OF CROYDON.

By BALDWIN LATHAM,

Mem. Inst. C.E., Mem. Inst. M.E., F.G.S., F.S.S., F.R.Met. Soc., &c.

IT is important that the members of the Croydon Importance of Natural History and Scientific Society should be acquainted with the past history of the town of Croydon with which they are so closely associated, and in connection with which they are ever carrying on observations and enquiries on various scientific subjects.

With the object of affording information, the author proposes in this address to give some particulars that may be valuable to Croydon and other places as to the conditions that have been observed in the past as having a very material bearing on the state of the public health.

You are doubtless most of you aware that the author Experiments has carried on for over thirty years past an enquiry on under- the movement of the underground water in the neigh- ground water. bourhood of Croydon and elsewhere, and into the geo- Geological logical and meteorological conditions, together with a and meteoro- thorough investigation of the state of the public health logical condi- in Croydon and other places.

The lamentable outbreak of typhoid fever which oc- Enquiry com- curred in Croydon in 1875 and 1876, and the widespread menced on misery caused by that epidemic, was the occasion of his personal commencing this enquiry, which was undertaken on the appeal of suf- personal appeal of those who had suffered.

He undertook this investigation into the probable causes of the epidemics which had occurred in Croydon in the past, with the view of throwing some light on the cause of the repeated outbreaks of fever which formerly visited Croydon, and their prevention in the future.

In commencing this enquiry he determined to completely investigate the case, totally regardless of any pre-conceived ideas, and to deal only with facts and not opinions.

The author should say that the labour and expense in Object of en- connection with the various enquiries were undertaken quiry to serve with the sole object of serving the best interests of Croy- Croydon. don, but unfortunately for Croydon, these labours and the expense have been of no avail. Although the author did

Offer to the Corporation. offer, without fee or reward, to advise as to new sources of water supply, those in authority would take no advice, at least from the author; and when subsequently they were offered by the author to hand over to them the whole of the surveys and information that had been collected, on the condition that they would continue the records for their own information, even this they made to appear would cost them £410 per annum, and was too expensive, but ultimately they undertook, on the pressure of some members of the Corporation, to have some observations by way of well measurements taken, which the author believes are carried out in the drainage areas of two of their pumping stations, and which of course can be of no value for the purpose of their future guidance as to where they should go to procure a proper supply of water, as will be observed from the fact that none of the three additional waterworks which the Corporation have established have turned out a success, while the large cost of these works has been most extraordinary for the small result that has been secured.

Rainfall stations. The author established numerous rainfall stations in the neighbourhood of Croydon which were essential in order to know what water was available, as the quantity of rain falling varies immensely throughout the district, and from year to year. This Society took up this part of the work which the Corporation of Croydon would not continue, and the beggarly sum of ten shillings a year is all the Corporation of Croydon contribute towards the cost of maintaining and being supplied with the daily rainfall records of over one hundred stations every month which are now carried on by this Society, and shows how little they understand the importance of securing the timely intimation of the state of their water supply, upon which the health of the district so largely depends.

Percolation experiments. The records as to the amount of rain percolating are still continued by the author, and are invaluable as a means of forecasting the probable volume of water available from year to year, and also of measuring the influence of periods of dryness on the public health.

Records of Croydon. During the course of his investigation the author has had occasion to look into the past records of Croydon from the earliest available periods, so as to be able to ascertain in what way the general health of the district might have been influenced in the past by climatic and other causes.

Croydon registers. With this view he had recourse to the examination of the Croydon Registers, which have been kept since the

year 1538; and later, or since 1837, he has been provided with the Returns of the Registrar-General for the Parish of Croydon, which commenced in July, 1837, and are continued to the present day.

In the tabulation of the distribution of the deaths or Conditions burials and other data over a long period, we are able to that influence ascertain the conditions which appear to influence the health. health of this and other districts.

The author may say, with reference to the Register of Marriages, Baptisms, and Burials, that the Register begins in 1538, shortly after the order of Lord Cromwell of the 29th of September, 1538, in the thirtieth year of King Henry VIII. From these records, commencing with the year 1539, the author has reproduced the annual figures for the general information; but with reference to these records it will be observed that there are a few years in which the records are not complete, but these fortunately are very few, and most of them occur in times of political or religious disturbances.

The author, in the case of Parish Registers, had the number of burials abstracted for each month of the year, so as to show the incidence of disease. The same has been done in recording the deaths that have taken place since registration commenced in 1837; in fact, with reference to the deaths that have been registered in Croydon since 1837 to the end of 1905 he has a record of the cause, the date, the age and sex, and place where every death has taken place.

Up to the year 1830 all the records of Croydon were kept at the Parish Church of St. John's: subsequently, and before registration commenced, also at other churches in the parish.

In preparing the rates of mortality that are set out in the accompanying tables, it must be clearly understood that the question of the proper population inhabiting the district is one of considerable importance. There was no Census until 1801 to give the accurate population, and, therefore, to arrive at the population in 1539, when the record commences, the author has had recourse to what was considered in healthy districts the rate at which people died at that period, which he has taken as one person in every forty-five living would die. Then, as there were fifty burials in the year 1539, that number multiplied by forty-five would give the probable population of Croydon in that year, or 2250 from then to the Census year 1801. The population has been interpolated year by year.

Deaths have
been
abstracted.

Determination of health of place. With reference to the actual death-rate, it was not until 1801 that there was any Census taken in this country, but before this date it used to be quite a common practice for determining the health of a district to use the proportion of births to deaths, which is a very fair way of ascertaining what is the state of health. It often occurred in the past, as will be seen from the records, whenever the number of births or baptisms was less than the burials, it indicated a state of health which was not at all desirable. On the other hand it is not unusual in some healthy and prosperous districts in this country for the births to exceed the deaths two or three times.

Proportion of Births to Deaths. Author's method. By using the proportion of births to deaths, or baptisms to burials, for the period before 1801, the author has been able to set forth a method by which it is very easy to determine at any time what is the actual death-rate, and which so long as the population can be known for a certainty will differ very little from the actual death-rate derived from using the figures of a known population. This method the author has termed proportional mortality, which does not require the population to be known except at such time as a Census or other period when the population is accurately known.

How proportional death-rate ascertained. The proportional death-rate is ascertained by dividing the percentage of deaths to births by the rate of mortality in a year when the population is known, which will give a number by which the percentage of deaths to births in other years should be divided, and the result will give the death-rate per 1000 approximately in a year when the population is not accurately known.

Example of proportional mortality. In 1539 there were recorded fifty burials and fifty-five baptisms. The death-rate in this year, 22·22 is assumed to be correct. The percentage of deaths to births = $\frac{50 \times 100}{55} = 90\cdot909$ the number to be used for multiplying

$$\text{the births} = \frac{90\cdot909}{22\cdot22} = 4\cdot0909.$$

Year 1741 a very unhealthy year. In 1741, the most unhealthy year known in Croydon, the burials were 271 and the baptisms 113. The proportional rule would give the death-rate as $\frac{271 \times 100}{113 \times 4\cdot0909} = 58\cdot62$ per 1000.

Death-rate given in Appendix. The death-rate in this year, arrived at by interpolating the population, is given in the records as 58·1, so that the population taken in this year appears to be fairly correct.

At the Census of 1901 the number to be used for multiplying the births is 3·764. Last year (1907), in Example last year. Croydon, Dr. H. Meredith Richards, Medical Officer, gives the births as 3967 and the deaths 1953, and states the death-rate was 12·5 per 1000. By proportional mortality the death-rate would be 13·08 per 1000, showing, what is not at all unlikely, that the population of Croydon last year was slightly over-estimated.

In an investigation of this kind we have to depend upon contemporary history for the state of the weather at the time before we have any instrumental records. The first rainfall records in this country were recorded at Townley, Lancashire, in 1677, and some years subsequently. It must be remembered that the rainfall at Townley would differ materially from that at Croydon, and, as a rule, would be much larger. It might also be a wet year at Townley and dry at Croydon, and *vice versa*. Previous to Townley there were rainfall records in France, and the rainfall at Paris has in several instances been mentioned, and probably would throw considerable light on what was taking place at Croydon. Whenever it has been possible, the nearest record to Croydon that has been kept of the state of the weather has been used.

When percolating gauges were started in the neighbourhood of London the author has given the result, and these percolation results have been continued in the observations until the actual percolation at Croydon has been ascertained and is given.

As to the state of general health, the author has as far as available given the state of health in London by noting whenever there was in any year an increase or decrease of the burials. These increases or decreases compare with the year immediately preceding, and after registration commences he gives the actual birth and death-rates as ascertained by the Registrar-General.

The price of wheat has been given every year as far as known, from which it will be seen that neither very dear nor very cheap victuals exercise much influence on the state of public health.

It is a remarkable fact that the low level of the subsoil water at Croydon is associated with every epidemic that has occurred in Croydon since the first waterworks were opened in 1851; that is, immediately preceding an epidemic period there has been a very marked state of low water, and that the springs at Croydon have been very low. This was the case with the first epidemic outbreak

Low-water periods.

of fever in 1852. It was preceded by a very low state of the underground water at Croydon, as it is on record that the water in the River Wandle was so low that the mills were obliged to shut down several hours per day. There was also very low water in 1854, 1858, 1864-65, 1868 and 1874-75.

In the 'Proceedings' of the Institution of Civil Engineers, volume 20, it is mentioned by Mr. J. Simpson (past President) that the River Wandle was very low in 1858. The volume at Garratt Mill was not more than 11,200,000 gallons per day, while at another time, at the same place, 92,000,000 gallons per day had been measured.

The water in the Wandle was so low at the end of 1864 that the proprietors of mills asked the Croydon authorities to be allowed, at their own expense, to divert the effluent water from the sewage farm at Beddington into the mill-heads of the mills at Beddington Corner. The Croydon branch of the Wandle at Croydon was dry in 1864 and also in 1874, so that every period of epidemic fever has been preceded by extreme low water in the ground, and these extreme low waters have only occurred at or before these epidemic periods.

Wandle dry at Croydon.

Great droughts affect Croydon.

In the period before registration of deaths took place it will be found that the most unhealthy periods are those when there was a great drought. The year 1741 is shown to have been the most unhealthy year on record at Croydon. The year preceding it was a dry year, and in 1741 there was a great deficiency of rainfall. The burials recorded in London show an increase both in 1740 and 1741.

Deaths, Wandsworth, 1741.

Deaths, Addington, 1741.

Unhealthy periods follow prolonged droughts.

Healthy year wet and cold.

By reference to other registers in the neighbourhood, 1741 seems to be established as an unhealthy year. For example, at Wandsworth the burials in 1740 were one hundred and thirty-four, in 1741 they were two hundred and thirty, and in 1742 they were one hundred and thirty-eight. In the rural village of Addington the burials in 1740 were six, in 1741 they were eleven, and in 1742 only four.

By reference to the accompanying particulars, showing the state of the public health in Croydon, it will be observable that the unhealthy periods are those when there has been a prolonged drought, and on the first indication of the rise in the water the unhealthy period commences, and continues most of the time percolation is taking place. The most unhealthy years are those of extreme drought, and a healthy year is a year that is wet and cold, especially in the summer period. A very wet

year that would bring out a Bourne flow at Croydon may be, and often is, unhealthy, especially in former times, when the increased underground flow tended to mix the waters of wells and cesspools which were in close proximity. It should be noted that a prolonged frost leads to a lowering of the underground water, as it locks up the surface water and prevents percolation, and has the same effect as a drought.

What will be observed with reference to all the records, whether past or present, is the fact that either at the time of or immediately following a period of great drought the health of Croydon has been invariably bad, the death-rate always rising more or less, and when there has been a wet and cold summer such as the past year (1907) the health of the district is always remarkably good.

The area in which the Croydon Waterworks were established was a very foul area, due to the accumulation of the filth of centuries, and one of the first things done to improve the sanitary condition of this low-lying area of the old town was to remove a mill that existed near the old church, and to construct a culvert to intercept the Bourne water, and the effect of these works was such that all the ditches forming fences between properties became dry, and claims were made against the authority by reason of the damage so caused. Local wells were also dried up. We therefore see that there was an artificial lowering of the water in this area which would bring about the same conditions in the ground as an extended drought, and on the first percolation taking place through the artificially prepared bed fever broke out and continued for years, until the strata had become comparatively purified.* Then followed periods of excessive low water, and the escape of sewage from imperfectly constructed sewers into the ground, producing in every one of the epidemics the same conditions that have been common to all the epidemic periods.

It should be distinctly understood that in the author's opinion the health of a district will not be affected by water supply these climatic conditions unless there are sources of pollution to affect the sources of water supply, and therefore the introduction of new sources of water supply that are not liable to pollution to the same extent as the original source of supply is a distinct gain to Croydon, however costly this may have been.

Immediately prior to the threatened outbreak of cholera in 1849, owing to the then bad sanitary state of Croydon, Origin of sanitary works, Croydon.

* *Vide Addendum as to improvement at the Waterworks.*

several of the inhabitants of the place banded themselves together to make enquiry as to the sanitary condition of the locality, and to suggest some remedy for the bad condition of the same, and in 1848 a public enquiry was held by Mr. Ranger, a Superintendent Inspector of the General Board of Health, with regard to the sanitary state of Croydon. The evidence given at this enquiry and subsequently tends to show that the lower part of

State of lower part of Croydon.

Croydon was in a very bad condition, and that it was very rarely free from outbreaks of fever, and as a result, in order to improve matters, the Public Health Act was applied to Croydon by an Order dated the 1st of August,

Local Board of Health elected, 1849.

1849, and shortly after that the first Local Board was elected, and in September of that year they commenced their public duties, which consisted in the appointment of Officers and the preparation of a scheme of drainage and water supply for the place. Of course all this was

Scheme of drainage and water supply prepared. Results of works unfortunate.

very proper and praiseworthy and was intended solely for the benefit of the inhabitants of the place, but unfortunately the result differed from what was anticipated on all hands.

The works proposed were practically completed in the year 1851 or early in 1852, and the waterworks were formally opened in December, 1851. Shortly after the opening of these works, however, a severe epidemic of enteric fever occurred, commencing in the year 1852 and continuing with greater or less severity in epidemic proportions until the end of 1855, the worst year being

Waterworks opened, December, 1851.

the year 1853 when the fever death-rate was 3·41 per thousand. (Any fever death-rate over 1 per thousand per annum may be looked upon as an epidemic rate.) This epidemic period has been followed by other epidemics, as

Croydon fever.

in the year 1858, in the months of September and October, fifteen deaths occurred from fever in Croydon, giving a fever death-rate, if continued for the year, of 3·31 per

Fever in 1858.

thousand per annum. In 1864 the fever deaths were high, and in the month of April of that year eight deaths occurred from fever. In the following years 1865 and

Fever in 1864.

1866 there was a further epidemic of fever. There were sixty-three deaths in 1865, equal to a fever death-rate of 1·33 per thousand, and in the year 1866 there were fifty-five deaths from fever or a death-rate of 1·23 per thousand.

Fever 1865-1866.

Fever was again high in 1868. In the first six months of that year the rate was about 1 per thousand per annum. No further epidemic outbreak occurred until

Fever 1868.

that of 1875, when there were eighty-nine deaths from fever in that year, and the fever death-rate was 1·39 per

Fever 1875.

thousand per annum. It was followed by almost as high a rate in the first four months of 1876. Since then there Fever 1876. has been a very much reduced death-rate from fever in Croydon, in which period the new supplies of water have New supplies of water. been introduced, and the old well at the waterworks has Old well protected. been partially protected.

This outbreak of fever, as well as all other outbreaks of Fever attributed to defective sewers. fever in Croydon, has been attributed to defective sewers and to the want of ventilation of the sewers, which was a theory started at the time of the epidemic in 1852 accompanied by a flow of the Bourne which was said to drive the sewer air from the sewers into the houses, but an enquiry into the state of affairs at Croydon at that date would show that it could have had nothing whatever to do with the sewers, which has been confirmed by subsequent experience, for when the drainage works at Croydon were carried out, there were four separate outfalls for the sewers, namely, one at the Filter House, at Pitlake, the second at the Waterman's Meadow, called Barrack Field in some of the reports, a third into a ditch at Thornton Heath not far from the Pond, and the fourth into the River Effra, at Upper Norwood. It was supposed that the fever was due to the fact of the Bourne water which flowed in 1852 and 1853 passing into the sewers of the lower part of the town, and driving the sewer air back into the houses, but it will be noted that the fever occurred in Croydon just upon the rise of the water after very low water at the beginning of 1852. There were submerged. five deaths from fever recorded in February, 1852, just on the beginning of the rise of the underground water in that year, and the sewers of Croydon when the Bourne flow occurred, which was not until Christmas, 1852, became completely submerged in water, and were full of water, and therefore it was impossible for any air to be found in them to be driven back into the houses. Moreover, the sewers at Waterman's Meadow and Thornton Heath were above the level of the Bourne, and could not in any way be affected by the Bourne flow, while Norwood did not suffer from fever although it had the same system of pipe sewers carried out there as in the other parts of Croydon, the fact being that in every epidemic the district supplied and the houses supplied with Croydon water alone suffered from fever, and in the last epidemic it is clearly set out that water drinkers suffered most.

When we come to enquire more into detail with regard to this 1852-1853 outbreak of fever in Croydon,

Inmates of Workhouse did not contract fever. Separate water supply.

Barracks in midst of an area severely attacked did not suffer. Barracks own water supply. Addiscombe College own water supply did not suffer.

No investigations made on intermediate epidemics.

Inquiry into influence of water dismissed on analysis.

Dr. Simon's Report.

Conclusion Dr. Simon.

Enquiry General Board of Health.

we find that the Union Workhouse, which was then located at Duppas Hill Terrace, entirely escaped, although it had a large number of inmates. It was connected with the sewers, but had a separate water supply from a local well which was used for dietetic and domestic purposes, the town water supply being simply used for the flushing of the closets and drains.

The Barracks, which were located close to the sewage disposal works and located in a large area that was affected with the fever, were then occupied by upwards of two hundred troops, but having no connection with the sewers, and having their own water supply from a well, escaped the fever.

Addiscombe College which was connected with the Croydon sewers early in 1853, and also had a supply of water from Croydon Waterworks, had no fever, but it had its own separate water supply for culinary purposes, which supply is still in use for the purpose of supplying the house called "Woodbury" in Upper Addiscombe Road.

No investigations were made into the intermediate epidemics, but in all these epidemics there seems to be a suspicion about the water supply, but the question of water supply was dismissed upon the ground that the analysis showed that the water was pure. Now the analysis which was in use in 1852, 1853, and 1858, was of such a character that it was utterly impossible to say whether a water was pure or impure, much less to say whether it contained germs likely to give typhoid fever, or any other disease, and in all the enquiries which were made into the outbreaks of fever, the question of water supply seems to have been dismissed in a very summary manner. The first enquiry into the outbreak of fever in 1852-53 was made by Dr. Simon, F.R.S., afterwards the principal Medical Officer of the Local Government Board, who was then the Medical Officer of the City of London. Dr. Simon reported:—"The facts of the case seem to intimate that the cause of the disease cannot have been interior and proper to each of several houses attacked, such as filth or ill-drainage of the individual tenement, but that it must have been some general exterior influence operating in many houses at once and in common."

Enquiries were made by the officers of the General Board of Health, who subsequently reported that the fever could not have been due to defective sewerage works, as the fever abated while the works remained.

Then in 1875 all those who had investigated the matter before the Local Government Medical Inspector

came upon the scene, and said that the fever in that year was entirely due to the water. All the outbreaks of fever occurring since the establishment of the Croydon Water-works have been absolutely confined to the Croydon water area, and this 1875 outbreak never went outside the Croydon water district, but the question in dispute was as to whether the water was polluted at its source, or whether the pollution was due to intermittent water supply enabling impurities to be drawn into the mains while the water was off the district, but it was clearly shown that there was not that coincidence between the period of intermission and fever as should have occurred if it had been due to this cause. In the part of Croydon supplied with water by the Lambeth Water Company, the supply was constantly intermittent and yet there was no fever in the houses so supplied, although many of the inmates of the houses used the same sewer in common with those supplied with Croydon water, and which suffered severely from fever. On the other hand it was shown that there were houses in the district which had no connection whatever with the sewers, in which the drainage arrangements were perfect, which had their water supply from Croydon, and suffered from the fever. It was even stated by the medical man who investigated the outbreak at Croydon that they might just as well charge the Croydon gas with producing the fever as Croydon water, yet curiously enough Croydon gas and Croydon water were almost identical districts, but it fortunately happens that Croydon water overlaps Croydon gas at one point, while Croydon gas overlaps Croydon water at another point, and there are several roads served by gas and water in this way, but the fact is that in not a single road where Croydon gas overlaps Croydon water has there been any fever, while in every road where Croydon water overlaps Croydon gas they had cases of fever.

The following are all roads within Croydon gas district and are not supplied with Croydon water, and the inhabitants had no fever in the epidemic of 1875: Bensham Grove, Beulah Road, Fernham Road, Holland Road (part), Leather Bottle Lane South (part), Parchmore Road (part), St. Paul's Crescent (part), and Woodville Road (part). The following roads are outside Croydon Gas Company's district and are supplied with Croydon water, and they all had cases of fever in them: Birchanger Road (part), Cargreen Road, Park Road, Grange Park, Selhurst Road (part), and Station Road.

1875 before visit of Local Government Medical Inspector.

All outbreaks of fever at Croydon confined to Croydon water area.

Intermittent water supply.

Croydon gas might be charged with causing fever.

Value of comparing fever in Croydon gas area with area attacked.

Roads in Croydon gas district not supplied with Croydon water.

Roads supplied with Croydon water outside Croydon gas district.

Defective
sewers,
influence of,
on fever.

Proportion of
fever various
districts,
Croydon.

High level
water district
suffered most
from fever.

Germs of
typhoid
lighter than
water.
Germs of
cholera heav-
ier than water

Defective
sewers,
influence of.

Defective
sewers not
cause of fever.

Moreover, the allegation that the fever was due to defective sewers must now be entirely put on one side for the reason that the author moved when a member of the Local Authority on separate occasions for returns, at the Local Board, one on the 16th May, 1876, for a list of all the defective sewers, which was presented to the Board on the 17th September, 1876, and the other on the 3rd October, 1876, for a return of where the cases and deaths from fever had occurred, and then comes out the curious fact that in the low level water district of Croydon one person in every 42·4 had fever in 1875, while in the high level district one in 22·65 had fever, and in the area outside the Croydon water supply area only one person in 808·8 had fever, and the few cases recorded on the outside area were principally children who came to school within the Croydon water area.

It will be seen that the high level district suffered much more than the low level district, and the reason is that the high level water district of Croydon did receive its water supply more direct from the wells in the centre of the town than the low level district did, as in the latter case there was a storage reservoir in which the waters could mix, but in the case of the high level the water was taken direct from the rising main from the wells into the district. In April, 1881, the author had tests made by putting lithia into the subsoil water outside the Croydon waterworks wells, and this lithia was found to pass into the waterworks wells, and into the water supply, when it was also found that the lithia was distributed in greater intensity in the high level district of water supply than in the low level district, thus following the incidence of the outbreak of fever. Moreover, it appears from observation and experience that the germs of typhoid are specifically lighter than water, and would naturally make for the highest part of the district; just in the same way the germs of cholera are heavier than water and make for the lowest part of a district.

It is also curious that in the roads with defective sewers, one person in forty-five had fever, but several roads with defective sewers are not mentioned in the fever return, as there were no fever cases in them. It is curious also that in the roads in which there were defective sewers, one death occurred in every 25·76 cases, while in the whole parish one death occurred in every 13·6 cases. These facts show that the defective sewers could not have been the cause of the fever in Croydon in the year 1875 or at any other time, and by inference that the

sewers could never have been the cause of fever in Croydon, and it was not until the old well was lined with iron cylinders and other means taken to remove the immediate impurities from the neighbourhood of the waterworks that any material improvement in health took place.

In the author's paper on the Croydon Bourne flow, it Drainage area was pointed out that the drainage area to Croydon, to Croydon including the drainage area to the ponds at Waddon, was wells. twenty-four square miles, of which two miles have been taken out of the area by the construction of the Oxted railway tunnel, which diverts a portion of the water from the district. Fourteen miles now drain to Croydon and eight miles to Waddon. This drainage area extends over the whole and parts of quite a number of parishes, and has an Elevation of elevation varying between one hundred and thirty and area. eight hundred and eighty feet above Ordnance Datum. The higher parts of this drainage area contribute very Rainfalls much more rain for the supply of the springs than the higher lower portions, and as a rule, having regard to the number of positions. rain gauges which the author established over the area, it was found that the average rainfall over the drainage area was just twenty per cent. in excess of the rain which was recorded at the former residence of the Rainfall, author at Duppas House at Croydon. In consequence of Duppas House greater rainfalls occurring in the higher parts of the drainage area, and also of the lower temperature on the higher grounds, and the diminution of evaporation occurring at these high altitudes, a larger proportion of the rain falling on the high lands enters the ground in the higher than in the lower districts, and the wells in the high districts as a consequence begin to rise before those in the low district, the waters, as a rule, passing down from the high to the low district in a wave-like form, at times producing the phenomenon of a Bourne flow in the Caterham Valley Bourne flow. and other places in the neighbourhood.

A most important factor for consideration with reference to this drainage area is the fact that the whole of this Croydon drainage area is densely populated, and that Population at the present time there cannot be less than 2500 living on people living on each square mile, on the average of the whole area, which is an enormous population on an area from which to be able to draw a pure water supply for the various districts whose only water supply has to be procured from the ground so thickly inhabited.

As a result of the author's investigations, he is of Fever and opinion that most of the fever and diarrhoea in Croydon diarrhoea due has been contracted from the polluted area in which the area.

Well at Waterworks.

present old waterworks are located. The place chosen for the construction of the waterworks was a well in the centre of the Old Town, an area that had been condemned as the most unhealthy part of the whole district. A well and boring but seventy feet deep was sunk and water pumped for supply. The strata consisted of nothing more than porous gravel overlying chalk. The water-line in the well in 1853 was but 2 ft. 4 in. from the surface. The effect of pumping was shown in that year to affect adjoining wells and springs as set out in the Report of the Commission appointed by Lord Palmerston to enquire into the outbreak at the time of the first epidemic of fever in Croydon in 1852-53, after the sanitary works had been constructed, who reported that there was infiltration from the permeable strata through which it was sunk fifteen feet. This effect of pumping at the Croydon Waterworks was denied in 1875, in consequence of which the author hired a yard and sunk an experimental well in it close to the waterworks well and set up a recording apparatus upon it, which at times showed a fluctuation of over eight feet in the water-level in this well outside the waterworks well, and this was after the waterworks well was lined with iron cylinders.

Effect of pumping at Waterworks

Fluctuation in subsoil water due to pumping.

Pumping did affect sewers, &c.

Dr. Westall.

Description of area about Waterworks.

Wells in area tainted.

It is difficult to find a level line on the diagrams taken from the recorder on this experimental well, so great is the influence and so immediate the effect of pumping on the level of the ground water outside the waterworks wells, and at a subsequent period the pumping at the waterworks has been shown to affect the sewers, wells, and water in the cellars of houses located a considerable distance from the pumping station.

Dr. Westall, who acted as Honorary Medical Officer for Croydon for many years, in an address given to the members of the South Eastern Branch of the British Medical Association, 22nd June, 1865, describes the condition of the district in which the well for supplying Croydon was located, as follows:—"All the refuse of the closets and privies was drained by porous earthenware pipes into cesspools, and eventually found its way by open ditches into two large ponds—heads of the river Wandle." "The cesspools were in the yards of the houses, or, in some cases, there was one large cesspool to a number of houses, and generally so close to the well (where one existed) that on the occurrence of a heavy rainfall the water became more or less tainted. In the lower parts of the town, especially, when the wells were only from three to six feet deep, it was an impossibility

to keep the water pure, and at the periodical flowings of the Bourne water, the earth became fully saturated."

Again, Messrs. Donaldson & Cox, who reported on the Donaldson & sewerage and water supply of Croydon on the 27th November, 1849, thus described the area in which the original waterworks were established: "The low ground about Old Town and Bog Island, and between that and Scarbrook Hill, and towards the Old Palace and the Church, being permeated by numerous springs, is all naturally wet," and they further state: "That after a careful inspection they found cesspools for house drainage had been long used until generally speaking the whole site of the town had become saturated with their soakage and the gaseous impurities resulting from the decomposition of their contents. Many of these cesspools had been filled up and new ones constructed, to avoid as they suppose the nuisance of cleaning the old one."

Site saturated
with soakage
of cesspools.

There were formerly two ponds in Croydon, Lauds Pond and Scarbrook Pond, both within the area affected by the pumping at the waterworks. These ponds were filled up without being cleansed, and are thus described by the late Mr. William Drummond, Chairman of the Local Board in 1861: "There were in the town two large ponds, each about half an acre in extent, with copious springs in them, but these ponds served as two large cesspools for the sewage of the town, and they were choked with black mud for a depth of two feet to five feet."

Many of you are aware that the author tried by every means in his power, when he was a member of the Old Local Authority, to prevent any extension of the Croydon Waterworks on the old site located in the very centre of this polluted area, and pointed out the desirability of going to other places where a comparatively pure water might have been secured, but failing in this, on the 6th February, 1877, he proposed to the then Local Board that a Joint Drainage Board should be formed, representing the parishes of Croydon, Beddington, Coulsdon, Warlingham, Sanderstead, Caterham, and others constituting the drainage area to the Croydon wells and other sources of water supply, and that a proper drainage scheme should be carried out which would entirely remove all pollution from the area. The matter was referred to a Committee of the Board, who drew up a report, which was presented on the 6th March, 1877, against the proposal the author had suggested, but intimated that small parts of Coulsdon and Sanderstead

Author tried
to prevent any
extension of
Waterworks
on old site.

Proposal for
Joint Drainage
Board.

Removal of all
pollution from
area.

could be drained into the Croydon sewers, which at a subsequent date was carried out.

Limited areas drained to Croydon sewers. Since then a slightly more extended area has been connected with the Croydon sewers, and only recently we have heard of the disputes and legal proceedings which have taken place between the Croydon Rural Sanitary Authority and the Corporation of Croydon with reference to the disposal of the sewage of but a small part of the whole area. Yet a very large portion of

Large population left to pollute drainage area. the population inhabiting this drainage area must dispose of its sewage within the area itself, and the only place to which the final sewage effluent can pass is into the underground water supply of the district, and the pollution of underground water still remains, as no means have been provided for dealing with the effluent from the sewage works, except conveying it into the ground to form part of the future water supply of the district.

Croydon authorities never realised advantage of removing all pollution. Economic advantages. The Croydon authorities never appear to have realised the great advantage which would accrue from entirely removing from the drainage area the dangerous sources of pollution which exist and which are likely to exist in the future as this area becomes still more populous, and they were blind to the economic advantages that would have arisen if the whole of the sewage was dealt with at the common cost of this large area. Although the author when a member of the Board made several suggestions to the authorities with reference to questions affecting the health of the district, especially the water supply, the Board never appear to have realised the importance of these suggestions; for example, during the time of

Author suggested old well should be lined. the fever epidemic in 1875 he suggested having the old well lined with iron cylinders, similar to what had been done by the author when he constructed the well he had made for them in the year 1864, but although the Water Committee agreed with this, when the matter was brought before the Board they declined to carry it out unless the well was first pumped down and found to be defective. This pumping down occurred first in November, 1875, and secondly in January, 1876, when it was found that water which the chemists condemned as being of a very polluted character was passing into the well, and it was not until after this that the Board could make up their mind to authorise the lining of the well.

Well pumped down. Impure water found to enter. Effects of lining well. With reference to the effects of lining a well with iron cylinders, the author may mention that in 1894 a very sharp outbreak of typhoid occurred at Newport, Isle of

Wight, due to pollution of the public water supply. At that time the author had just finished a new iron-lined well at the waterworks, and urged that the town should be supplied entirely from this well, which was only done after the author had spent an entire day in the engine-house to show it could be done. It so happened that this well could be relied upon to give a sufficient supply of water, and the consequence was that the epidemic stopped quite suddenly, showing that it is possible to shut out under certain circumstances impurities that produce typhoid fever. Afterwards, as a further security, until the new waterworks could be made, the author surrounded the whole of the site of the waterworks with a puddle wall to a considerable depth, which, to a great extent, prevented the near approach of any impurities to the wells, but the question arises whether or not the lining of the wells in this way is of permanent value where there is no impermeable covering over the water-bearing strata.

The terrible epidemic of typhoid fever which occurred in Worthing in 1893 will not be forgotten. At the time the author was making a survey in the neighbourhood with reference to the underground water. So great was the mortality that, in 1893 alone in the sub-district of Worthing containing a population of about twenty-one thousand persons, one hundred and ninety-three deaths occurred from typhoid fever, giving a fever death-rate of over 9 per thousand of the population. The author without fee or reward was the means of putting the Worthing authorities in possession of a source of water supply of an unimpeachable character, although they had previously proposed to establish new waterworks at two places, both of which had to be condemned.

When the epidemic of fever occurred in Croydon in 1852, immediately after the new sanitary works consisting of the new system of tubular pipe drainage and new waterworks were completed, the whole question as to the cause of the fever was directed against the drains and sewers which were something new, and the question of the fever being caused by water was not entertained, as the water was analysed and pronounced to be pure, although it appears that many persons entertained a suspicion at this early period that it was the water which was at fault, and as to the analysis, it was the most ordinary affair, and could not show if the water was wholesome or not. It will be seen from the particulars as to the state of health at Croydon that years before the sanitary works were carried out the place was in a con-

Fever in district before works estab-lished.

stant state of epidemic from fever, and that between 1838 and 1851 inclusive there were nine years when the fever death-rate varied from 1·10 to 2·23 per thousand.

Reference to registers and state of health

Incidence of disease same before sewers constructed.

By reference to the results which have been tabulated from the Croydon Registers and the Registrar General's Returns, it will be observed that Croydon always has been at times extremely healthy, and at other times just the reverse. Practically there is no difference in the incidence of disease in the district before the sewers of Croydon were constructed and subsequently. The sewers could not have exercised any influence on the deaths before the period of their construction.

Water supply always wells in strata.

The water supply was practically the same before and subsequent to the first epidemic down to August, 1888, when an additional supply was brought in from Addington, and in July, 1899, from Waddon, and at a date subsequent to that dealt with in this address from Woodside.

Fresh water supplies brought into Croydon.

The effect of the introduction of these fresh supplies of water, which are not subject to the same extent to pollution as the original supply and the partial protection of the original supply, has had a very happy influence in modifying the cause of disease in Croydon.

Incidence of deaths before and subsequent to establishment of waterworks

The author has taken out the percentages of deaths taking place every month of the year, first for the period 1838 to 1851 before the establishment of the Croydon Waterworks or Sanitary Works, and subsequent to that date down to the end of the year 1901 with the following result:—

	Period between 1838 and 1851 Before Works.	Period between 1852 and 1901 Since Works.
January	9·82	10·47
February	8·53	8·59
March	9·43	9·00
April	9·06	8·72
May	8·87	7·84
June	6·57	6·66
July	7·46	7·74
August	8·02	8·56
September	8·80	7·56
October	7·06	7·65
November	7·56	8·10
December	8·82	9·11
<hr/>		<hr/>
	100·00	100·00
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From this it will be observed that there is very little

difference in the incidence of disease between the period before the establishment of the sanitary works and the period subsequently. June in both periods is the most healthy month, while January and December are the most unhealthy periods.

With reference to the deaths from fever in Croydon we have the following figures:—

	Period between 1838 and 1851.	Period between 1852 and 1901.	Incidence of deaths from fever.
January	12·96	11·45	
February	8·65	7·16	
March	7·09	7·60	
April	8·05	9·29	
May	7·09	7·69	
June	5·25	5·75	
July	6·48	6·89	
August	9·87	6·27	
September	9·26	7·78	
October	7·71	10·25*	
November	8·95	10·67	
December	8·64	9·20	
	<u>100·00</u>	<u>100·00</u>	

Since the waterworks have been constructed in the area which was formerly the part of Croydon visited by fever, Lower part of the water has been distributed from this area to a larger formerly suffered from district and population, which before this supply of water did not suffer from fever to the extent that the inhabitants of the Old Town of Croydon did, but have suffered in common with the rest of Croydon water district since they had the water from the Old Town area.

It should be observed that the foregoing figures refer to the whole of the district of Croydon. A part only of Croydon is supplied with Croydon water. If the mortality within Croydon water district is compared with the district outside and in Croydon after allowing for the deaths taking place in the workhouse and hospitals, it has been found that the death-rate outside from 1838 to 1855 was higher than in the Croydon water district, but after that year or since the Lambeth Water Company supplied the district with pure water from Ditton, the death-rate within the Croydon water district has always been considerably higher than in the district outside. It may be observed that about one-fourth of all the population of

* Large number of deaths from fever in this month in 1875.

Croydon has been and is at present supplied with Thames water from the works formerly belonging to the Lambeth Water Company.

Lambeth water supply. The late Mr. John Taylor, Mem. Inst. C. E., the engineer of the Lambeth Water Company, informed the author that the Lambeth Water Company began to supply the Upper Norwood part of Croydon with water in the year 1847, and in 1850 gave a supply for three days per week to South Norwood. They did not supply a large pauper school at Westow Hill, Upper Norwood, containing a thousand inmates, at which children from different London parishes were taken in at a farmed rate, and in which a great number of deaths occurred every year. The author finds that so long ago as March, 1836, questions were asked in Parliament as to the cause of the heavy mortality in this establishment. The water which was first supplied to Norwood was taken from the Thames between the bridges, and a great improvement in the health of the district occurred after the intake of the Lambeth Water Company was removed to Ditton. The improvement in the source of water supply and the removal of the school in question have rendered Norwood a very healthy district.

Improved health of district when water taken from Thames at Ditton.

Reason why Croydon should be healthy.

Population due to immigration.

Temperature of water in Croydon wells.

There is certainly one reason why Croydon should be an extremely healthy place, and that is that a large portion of its population is made up by immigration and not by the increase of births over deaths, and consequently have not gone through the vicissitudes of early life. Dividing the periods since the Census was taken at the beginning of the last century, you will find the increase of the population in the first twenty years due to immigration was 46·85 per cent., the next period 1822 to 1841, 77·78 per cent., the next period 1842 to 1861, 72·30 per cent., the next period 1862 to 1881, 63·68 per cent., and the last twenty years from 1882 to 1901, 52·54 per cent. At the last Census of 1901 the population of Croydon was made up of 56,492 persons who had been born in the Surrey ex-Metropolitan district in which Croydon is located, but which contained at the Census a population of more than double that of the County Borough of Croydon, and of 77,403 persons who had migrated into the Borough from other localities.

It has been stated with reference to the wells at Croydon that the water of these wells is always of uniform temperature of 51° Fahrenheit, both in winter and summer, and that being so it is impossible for any surface water with its impurities to enter them, and that in

consequence they must be pure. Temperature observations are extremely valuable for determining the sources of water supply, and should never be neglected, but it must be pointed out that what has been stated with reference to the Croydon wells is not correct, and that even now that the wells are lined there is a constant flow of the immediate subsoil water in large volume into these wells, the effect of the lining being to cause the water to filter, and the more perfect the lining the greater restriction of the water entering the wells, which is shown by lowering the difference of level of the water inside and outside wells. Effect of the wells, and also by the fall of the subsoil water immediately outside towards the well.

In Mr. Page's report to Lord Palmerston, after stating that the temperature of the water in the old well was 53° , he says that in the reservoir it was 50° , and in the pipes 45° . It should be observed that the temperature of water supplied by the mains is governed by the temperature of the ground for the time being at the depth at which the water mains are laid, and the water varies in temperature considerably throughout the year. In the epidemic year 1865, the author was making experiments with regard to the temperature of the water in the waterworks wells. In February and March, 1865, the temperature of the water in the wells varied from 51° to 55° , in July 1866 from 51° to 53° , and in January 1867 from 51° to 53° . On the 6th August, 1876, the temperature of the water in the new well at Croydon Waterworks was 52.5° , and the water flowing out of the Bourne Culvert on the same day was of the same temperature, and being a Sunday there was no other water to affect the temperature of the water of the Bourne Culvert, except that flowing from the surface springs. The water was therefore of the temperature of the immediate subsoil water.

From constant observations which the author has made, it is shown for example in the year 1904 that the old well at Croydon Waterworks was in the best state to resist entry of impure water. Lined well in protection with regard to the restriction of the water entering, as the difference of level on the average of the whole year between the water inside the old well of the Croydon Waterworks, and the author's experimental well located immediately outside the waterworks well, was 9.73 feet, and the fall in the water between the experimental well, on the west side of the experimental well adjoining the old well, was but 2.68 feet. Last year, Fall of sub-soil water to 1907, the difference of level between the water outside Croydon wells.

and inside of the old well was 5·71 feet, and the fall from the west side experimental well to the experimental well adjoining the old well was 5·38 feet, showing that there was a much larger quantity of the surface water passing into the old well last year than in the year 1904. In the year 1904 of course the springs were very high, being a Bourne flow year, which might have had something to do with it. The actual quantities passing, of course, have been calculated by the author from the fall towards the well, and are known to be considerable, and can be proved to be correct from the temperature of the water pumped being the temperature of the surface water when mixed with the deeper water in the varying proportion each is supplied.

Quantity of
water passing
into Croydon
wells.

Local epidem-
ics of fever.

Caterham
Waterworks.

Caterham
Asylum.

No epidemic
of fever due
to sewer air.

Originator of
sewer air
theory.

Since the epidemic in Croydon of 1875–76 there have been two local epidemics of fever in the neighbourhood, namely, the outbreak which occurred in connection with the Caterham Waterworks in 1879, and a further outbreak which occurred in connection with the supply of water to the Caterham Asylum in 1894, which also produced an outbreak in the Guards Barracks at Caterham which received a supply of water from Caterham Asylum deep well.

There never has been an epidemic of enteric fever in the author's opinion, except in the supposititious case of Croydon, which has been traced to sewer air, and the whole case of the noxious properties of sewer air is based upon what has been the supposed experience of Croydon, and there is no evidence that the outbreaks that have occurred from time to time in Croydon could have been caused by sewers or sewer air. The originator of the idea that it was the want of ventilation of the sewers at Croydon that caused the epidemic in 1852–53 was a Mr. Charles Penfold in a letter addressed to the Local Board read at their meeting on the 25th January, 1853, in which he "suggested that the cause of the prevailing epidemic consisted in the accumulation of the noxious gases generated in the pipes which had no vent provided for their escape and that they find their way into the houses, and he recommended that shafts should be made at convenient points."

It is generally supposed that Dr. Neil Arnott discovered the cause of fever in Croydon to be due to the want of ventilation of the sewers, but Dr. Arnott was not instructed to enquire into the Croydon case until the 14th February, 1853, and he reported on the 21st April, 1853, that ventilation of the drains had been carried out at the Friends' School at Croydon, but this did not protect the

inmates of that establishment from subsequent attacks of fever, and the consequence was that the establishment has been removed from Croydon.

Prior to the outbreak of enteric fever in Croydon in 1875, there was no town which had been provided with such a large amount of sewer ventilation. Every house-drain had at least one ventilator, and the sewers were ventilated by means of open ventilators at frequent intervals. There cannot be the slightest doubt that in the case of Croydon the cause to which the outbreak of fever was attributed was one of mistaken diagnosis, which has led to extremely heavy expenses being incurred both in Croydon and elsewhere, while the real cause of the disease has not received that attention which otherwise would have been bestowed upon it at an early period and thus have saved much loss and suffering.

It should be observed that the number of burials registered in Croydon when registration of marriages, Difference between burials and actual deaths.

births, and deaths commenced, shows a very considerable difference from what the registration records give, and also the importance of the establishment of registration laws. In the year 1838, the first complete year of registration, the actual deaths that took place in Croydon were four hundred and sixty-four. The burials registered in the same year number three hundred and fifty-five. The births registered in this year were three hundred and sixty-four, and the baptisms three hundred and forty-nine. Some of the persons dying within Croydon parish would be buried elsewhere, as in 1838 one hundred and seventy-three persons died in Norwood, and thirty-eight in the workhouse at Croydon, while only one hundred and six burials took place in the year, at All Saints', Upper Norwood, which are counted in the Croydon burials. An examination of the registers in adjoining parishes show that some Croydon people from remote times have been baptized and buried in these outlying places. In all probability, therefore, before we had actual registration of births and deaths taking place in the district, the numbers recorded in Croydon will be below what they actually were, and this would tend to make Croydon in the past appear more healthy than it really was.

Sources of information.
In the course of preparing this address the author has referred to the following authorities:—Report of the Croydon Town Commissioners, 1st July, 1848; Mr. Ranger's Report, 12th April, 1849, on the sanitary state of Croydon before the adoption of the Public Health Act;

Persons dying at Norwood buried outside district.

Burial rate probably higher before registration.

Report of Messrs. Donaldson & Cox, 27th November, 1849; Report of the Croydon Local Board of Health to the Ratepayers of Croydon, 31st March, 1851; Report of Dr. Southwood Smith and Dr. John Sutherland, January, 1853; Report of Dr. John Simon, F.R.S., Medical Officer of the City of London, 7th February, 1853; Report of Mr. R. D. Grainger and Mr. Henry Austin, 18th February, 1853; Report of Dr. Arnott and Mr. Thomas Page, C.E., 1853; Report of Colonel G. H. Thompson, 1853; Report of Mr. Thomas Baker, 16th March, 1853; Report of Mr. Thomas Wickstead, C.E., October, 1853. The subject of report upon the waterworks was withdrawn from Mr. Wickstead's consideration by the Local Board of Health. Report of Dr. George Buchanan, 1876. Evidence which was taken in the various enquiries set out in the reports as to the cause of the outbreaks of fever at Croydon and the state of Croydon before the works were executed. He has also consulted the Minutes of the Croydon Local Board of Health and also of the Croydon Board of Guardians.

In conclusion the author may say that he should not have devoted his time and a very large expenditure of money in the investigation of the conditions concerning the outbreaks of enteric fever and other diseases in Croydon, if he had not been impelled by the feeling that it was his duty when asked by those who suffered in 1875-76, and although he regrets that Croydon directly reaps no advantage, yet other places have had the benefit of the knowledge gained by the investigations that have taken place.

ADDENDUM.

The following extracts from the Minutes of the Croydon Local Board of Health are of importance, having regard to the fact that after their date there was a material improvement in the health of Croydon as regards deaths from fever.

Meeting held 6th November, 1855. "A complaint was made by Mr. Russell that the Surveyor (Mr. Cox) had been cementing the well at the waterworks without the consent of the Board, and the Surveyor explained his reasons for so doing."

This well was rendered on the inside with cement over the brickwork, and remains so at the present day.

A week later on 13th November, 1855, the following Minute appears:—"Mr. Cox (the Surveyor) reported that in his opinion it was absolutely necessary that 9-in. iron pipes should be laid in the place of the earthenware pipes in the locality of the well, consisting of about 200 ft., when it was proposed by Mr. Sterry, and seconded by Mr. Owens, 'that Mr. Cox's recommendation should be immediately adopted.' Mr. Russell moved as an amendment, and Mr. Castledine seconded it, '*that as the well had just been cemented such alteration was unnecessary.*' The amendment was put when Mr. Russell and Mr. Castledine voted for, and Mr. Crafton, Mr. Owens, Mr. Sterry, and Mr. Drummond against it. The Chairman then put the original motion, when Mr. Crafton, Mr. Owens, Mr. Sterry, and Mr. Drummond voted for, and Mr. Russell and Mr. Castledine against it, and the Chairman declared the motion carried."

It will be noted that after the date of the protection of the well as indicated above, there was a marked improvement in the health of Croydon, and a diminution in the deaths taking place from fever.

RECORDS CONCERNING THE HEALTH OF CROYDON
FOR THE YEARS 1539 to 1901.

BY BALDWIN LATHAM,

Mem. Inst. C.E., Mem. Inst. M.E., F.G.S., F.S.S., F.R.Met.Soc. &c.

Year	Popu- lation.	Marri- ages.	Bap- tisms	Bur- ials.	Death rate per 1000	
1539	2250	19	55	50	22·2	In the preceding year there had been a great drought which continued throughout this year, except that it is stated in the continuation of 'Carion's Chronicle' that it was a good year as touching the weather, but in winter at every full moon there was much rain. The greatest number of burials occurred in January.
1540	2258	17	72	87	38·5	Sickly year throughout England. Exceedingly dry and hot summer. Corn was well got, but fodder for beasts was clean burnt up. Excessive drought, wells and rivers dried up. Greatest number of burials occurred in September.
1541	2266	18	44	64	28·2	Weather variously stated; some say very droughy, others that the whole summer was wet, that wine could not come in its proper season, and it was very sour. Most unhealthy month was November.
1542	2275	18	55	34	15·0	Intemperate, rainy summer. This year there was great death-rate in London from pestilence. Most burials took place in April.
1543	2283	10	57	82	35·9	Severe frost in winter. Rainy summer. Great dearth of cattle. Most burials in Aug.
1544	2291	19	53	76	33·2	Corn this year rose in price. Most burials in April.
1545	2299	14	57	15	—	Imperfect record; no burials recorded in last five months of year. The French invaded the Isle of Wight. The summer this year very proper and warm. Fruits of earth good. Pestilential epidemic called Troop Gallant.
1546	2307	21	55	25	—	Imperfect record; no burials recorded the first six months of year. Peace with France; prices fell by reason of good crops.
1547	2316	24	42	40	17·3	Intense frost end of year. Floods at Paris. April, month with the greatest number of deaths. Pestilence reported in London.
1548	2324	12	37	45	19·4	Reported great floods at Cambridge and probably other places. Great mortality by pestilence in London. September most burials
1549	2333	16	45	42	—	Imperfect. Three months, January to March, no record of burials. Greatest number of burials in October. Great sedition in England, especially in Norfolk, Cornwall, and Devonshire.

Year	Popula-tion	Marri-agess	Bap-tisms	Bur-ials	Death rate per 1000	
1550	2341	12	53	58	24·8	Rebellion attempted in Kent. Great floods in summer. High prices. Drought in winter. July and December the highest record of burials.
1551	2350	11	47	48	20·4	Sweating sickness in London both last year and present year. Weather rainy when sweating sickness broke out. Most burials in July. Wheat 8s. per quarter.
1552	2557	14	49	67	28·4	Long drought and grievous heat. Plague prevalent. Most burials in month of March.
1553	2366	14	57	46	19·4	Year of plenty of victuals. Change in religion. March had the most deaths.
1554	2375	16	64	42	17·7	Sir Thomas Wyatt rebellion. Very wet and foody year. In April the most burials. Dearth in London.
1555	2384	8	59	58	24·3	In October fell great rains that caused a flood in the Thames. Great scarcity. In January, May, and September most burials, being equal in each month.
1556	2392	6	60	53	22·2	A drought. There was a great dearth. Fevers rife. That after harvest corn fell from 5s. to 1s. 4d. per bushel. In the month of February most burials. Ducarel says that on the 25th May in this year a great and terrible earthquake happened at Croydon and some villages thereabout.
1557	2401	11	51	105	43·7	Agues and fevers rife in country. So many died and were sick in harvest time that harvest neglected. Wet harvest. Most burials occurred in April, but September, October, and November had an equal number and nearly as many as April.
1558	2410	25	50	118	49·0	All spring, summer, and harvest being hot and dry, grievous sickness and dangerous fevers raged throughout the country. Queen Mary died. Much corn was lost for lack of workmen. August the month of most burials. Great drought. Wheat 14s. per quarter.
1559	2418	29	40	102	42·2	In September, tempest in London with terrible thunder and lightning. The greatest number of burials in February.
1560	2427	34	59	73	30·1	Year of dearth. August the month with most burials.
1561	2436	23	60	53	21·8	Great scarcity of corn. On 4th June, the steeple of St. Paul's burnt by lightning. Also thunderstorm in February. In January the greatest number of burials. Great frost and sudden thaw.
1562	2445	23	60	42	17·2	Soldiers brought plague into England. Plague bad in London; said that plague due to the heat of the time and the putrefaction of the air. Most burials occurred in April and December.
1563	2453	19	53	56	22·8	Plague in London. 20,136 persons died from it. Scarcity of money. Dearth of victuals. Great lightning and thunder this year. In June were the most burials.

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1564	2462	22	71	36	14·6	Great and universal rains. Great flood in the Thames in September, many cattle drowned; at Lynn Marshland inundated. Much stock lost. Great flood at York, swept away two arches of Ouse Bridge with twelve houses that stood upon them. May the month with most burials. December frost.
1565	2471	9	49	48	19·4	Year commenced with severe frost. Thames frozen, but on 3rd of January thaw set in followed by floods. In July severe thunderstorms. Corn had to be imported through scarcity of home produce. October the month with most burials. Famine throughout these islands.
1566	2480	10	55	35	14·1	This spring great and continual rains. Summer and harvest droughty. Greatest number of burials in March.
1567	2489	13	67	27	10·9	Prices lower. A severe winter in England, and in summer an excessive drought. April the month with most burials.
1568	2498	9	63	51	20·4	After a dry summer followed a sharp winter. The plague in London. August month most burials.
1569	2507	14	55	53	21·1	Plague in London. Intemperate weather. Corn still dear. Gales prevalent. October most burials.
1570	2516	16	48	50	19·9	In October terrible tempest of wind and rain. Bridges washed down by floods. October most burials.
1571	2525	15	45	51	20·2	Weather intemperate with south winds. Rain and fog, winter moist. January and Aug. most burials. Floods in Lincolnshire.
1572	2534	24	34	39	15·4	Continued rains and snow to middle of February; great and deep snow and freezing rain; great and sharp frost from November into January. December the most burials. Wet year.
1573	2544	23	36	65	25·6	Of these burials, twenty-one recorded as pest. A dearth caused by exportation. Wheat rose from four shillings to seven shillings a bushel. April had the greatest number of burials.
1574	2553	26	51	49	19·2	Terrible rainstorm in London in September. Very stormy in November. Spring like summer, summer like spring. Rainy winter. Most burials in April.
1575	2562	14	58	31	12·1	Flood recorded in Avon at Tewkesbury in February. Weather for the year exceedingly good and healthy and all necessities of life plentiful. November and December had most burials.
1576	2571	16	65	57	22·2	In March gales. Rainy summer in July. Price of corn greatly increased. In July most burials.
1577	2581	12	49	51	19·8	In March gales. In August a tempest in Suffolk. In June showers of hail and rain. In December most burials.

Year	Popula-tion	Marri-agess	Bap-tisms	Bur-ials	Death rate per 1000	
1578	2590	17	46	102	39·4	Recorded as a pest year. Dry year. Recorded John Dee's diary that 13th June rain and thunder. That on 26th September the first rain that came for many a day. July had the most burials. Recorded that a great snow fell in Ireland.
1579	2599	20	61	50	19·2	Early in February and in April a deep snow followed by thaw and floods. In May a flood in the Thames. March moist. In October gales and great rain. Thames in flood October. July most burials.
1580	2608	15	60	43	16·5	Frost very intense in England; at rising of the Dogstar came a cold dry north wind. In June great thunderstorms. July most burials.
1581	2618	21	55	50	19·1	February 26th a fair warm day. In March rain and windy. In August great showers. July and September most burials.
1582	2627	18	52	45	17·1	Pope Gregory omitted ten days from Calendar. In April showers, in August great tempest, thunder and lightning, wind, rain, hail; in December thunderstorms. The plague in London. Most burials in Dec.
1583	2637	14	71	52	19·7	The summer was very hot and contagious, the infection of the plague more universally dispersed through England than in many years before. A great tempest 18th Aug. May had most burials.
1584	2646	16	74	49	18·5	In July thunderstorms. Some drought and heat. A healthy year. In August and September most burials.
1585	2656	14	66	42	15·8	Said to have been little grass or corn or wine. Most burials in June.
1586	2666	16	70	38	14·3	General dearth due partly to the unseasonable weather and partly from transporting grain. Wheat eight shillings a bushel and rose to ten shillings. In August the most burials. Must have been wet to cause failure of wheat.
1587	2675	18	61	57	21·3	Price of grain increased. Wheat rose in price to thirteen shillings per bushel. This year a late spring and cold summer. Harvest was good. September was cold. In the north frost and gales with sometimes hail, snow, and sleet. Greatest number of burials in April. The plague raged in some places in the country.
1588	2685	19	82	31	11·5	The Spanish Armada defeated. May a gale on the south coast. This year looked upon as a fateful year by prophets but appears to have been most fortunate and healthful. In March the most burials.
1589	2695	15	70	31	11·5	In January great north-east gale did much damage by land and sea. In August and September east wind. In August great thunderstorm about London. English fleet brought Hungarian fever into the country. Most burials in December.

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1590	2704	10	75	28	10·4	In January a great and terrible tempest in London. Great damage at sea. Said to have been a drought and very little hay. Most burials in August.
1591	2714	16	55	39	14·4	In spring a drought. In summer westerly winds and little rain. Thames fordable at London Bridge. In March greatest number of burials.
1592	2724	14	68	64	23·5	The plague in London. 11,503 died of the plague and 25,886 total deaths. A droughy year. The Thames fordable at London Bridge. Great death of cattle for want of water.
1593	2734	20	67	74	27·1	Plague in London and died of the plague 10,662 persons. In September tempestuous; windy with hail and rain. Greatest number of burials in March.
1594	2744	19	69	21	7·7	Great dearth of corn. Rain fell in great showers from May to the autumn. In September floods that broke down bridges. Many great storms of wind in March did much damage; in April heavy rain. In March and May most burials.
1595	2754	16	64	36	13·1	In April thunderstorms, weather cool and continued so throughout May. Profound shocking rains and floods. August 5th rainy. Most burials occurred in December.
1596	2764	8	70	62	22·4	From August to November fell great store of rain. Wheat ten shillings per bushel, floods general. At Croydon frost in March. Dr. Ducarel's History of Croydon says they had hard weather in Croydon on 3rd of March. In August greatest number of burials.
1597	2774	17	63	68	24·5	A famine, wheat very dear. January, February cold and wet, March cold, dry and frosty, April cold showers, May cold and dry. Plague in Kent. December most burials. Wheat 80s. per quarter.
1598	2784	19	56	35	12·6	Frost beginning of January. Thames at London nearly frozen over. In March four very hot days, rest of month bitterly cold with hail and snow, 25th March thunderstorm with hail and snow, still very cold. In September thunder and lightning. In December great frosts and snow. January most burials. Hailstones fifteen inches about fell at Lincoln.
1599	2794	22	77	27	9·7	27th March great thunderstorm in London. March, April, and May cold and dry. Whit-Sunday great rain. June and July hot and for most part dry. In August great rain. Great storm of wind 23rd December. In January most burials. Wheat at 27s. per quarter.
1600	2804	16	77	28	10·0	Frost in January. 23rd March being Easter Day it snowed and was cold which

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1601	2814	18	63	42	14·9	continued to end of March. Snow on 30th March and 4th April. April and May cold. Spring cold and dry. In June a great tempest of hail which broke glass windows. The river Trent changed its course at Newark in a flood. In December great floods. In November greatest number of burials. June was very cold, frosts every morning. Lightning and thunder often before Christmas. In February was a great tempest. In Switzerland the air all this year loaded with vapours. January had most burials. Called a wet year.
1602	2824	18	73	59	20·9	Plague began in London. On the Continent after long, cold, humid condition, a dry harvest and winter. Nov. most burials.
1603	2834	16	65	160	56·5	Of the burials 127 are recorded as due to pest. Plague in London; 40,042 died, of which 36,269 due to plague. Supposed plague brought from Ostend to London. Greatest number of burials occurred in December. Exceeding drought in all parts of England.
1604	2844	19	80	71	25·0	Of the burials 42 died of pest. Plague still continued in London but only 896 died from it. Greatest number of burials in Jan.
1605	2855	27	80	78	27·3	One of the burials from pest. Plague still lingered in London. Gunpowder Plot. Greatest number of burials occurred in September and November.
1606	2865	21	65	62	21·6	Four of the burials recorded as pest. In January floods arising in Severn Valley due to breaking of banks. March 29th floods general. Plague still in London. Remarkable fall of snow. In September the most burials. Wheat 42s. 5d. per quarter.
1607	2875	21	88	58	20·2	In January floods due to wind and tide. Extreme hot summer. A great frost and snow began 5th December and continued to 14th February, 1608. Frost fair on the Thames. Horses crossed the Ouse at York on the ice. A hot fortnight about St. James' tide. Greatest number of burials occurred in December.
1608	2886	20	77	51	17·7	Frost fair on the Thames. Frost until beginning of February, when it suddenly went. Did great damage to bridges, killed many small birds and fishes. Very many tempestuous winds this year. Frost again in December. Plague in London, 2262 died from it. In April the most burials.
1609	2896	14	89	65	22·4	Frost fair on Thames in January. Frost lasted to April. In August excessive wet caused corn to rise in price. Harvest very wet, much corn spoiled. Ten deaths recorded in Croydon from pest. Plague in London, of which 4240 persons died. August had the most burials.

Year	Popula-tion	Marri-agess	Bap-tisms	Bur-ials	Death rate per 1000	
1610	2907	16	75	117	40·2	In Croydon 38 burials due to pest. Plague still in London, caused 1803 deaths. Plague in many places in the country. An excessively hot and dry summer. A great snow in Derbyshire on Michaelmas Day. September had most burials.
1611	2917	28	75	108	37·0	In Croydon eight burials due to pest. Plague still in London, caused 627 deaths. Dry spring. A great drought. Land flood in Derbyshire in May, and floods in November and December. Most burials in Feb.
1612	2928	25	80	79	27·0	Most burials in April. Hot and dry summer. Grass and hay very scant, followed by a mild winter and a forward spring.
1613	2938	13	80	73	24·9	Greatest number of burials in November. In the spring fell much rain causing floods. Dreadful inundations of the sea happened this year in Essex, Suffolk, Norfolk, and Lincoln. Wheat 47s. 4d. per qtr.
1614	2949	22	76	63	21·4	Most burials in January. In January, February, and March, great snows at York recorded. Had eleven weeks frost. After a flood in the early spring drought continued till August. Great scarcity of hay and corn. Inundation in Lincolshire from the sea.
1615	2959	14	94	64	21·6	Snow from January to middle of March and disappeared end of May. February 12th was a day of terrible snow and the Sunday following a greater (Ducarel). A flood followed and then great drought which continued to August. A terrible snow recorded in Croydon on 12th February. A dry summer. Most burials in April.
1616	2970	18	78	71	23·9	Greatest number of burials in March. A great drought this year and hot, after end of November rain and tempestuous weather.
1617	2981	25	74	80	26·8	Greatest number of burials in September. Only six deaths in London from plague. Wheat 43s. 3d. per quarter. In February a meteor seen.
1618	2992	14	91	82	27·4	Most burials in May. A dry summer. There were 18 deaths from plague this year in London.
1619	3003	19	82	71	23·6	Greatest number of burials in January. But 9 deaths of plague in London this year. Plague raged in Denmark.
1620	3013	16	84	65	21·6	Greatest number of burials in May. Frost fair on the Thames. Heavy snowstorms. Eskdale Moor sheep destroyed. Wheat at low price. Disability to pay rents. Plenty of all things but money.
1621	3024	18	53	42	13·9	Greatest number of burials in December. Land fell in value from low prices. The summer very cold and wet. Much rain. Corn beaten down. This year harvest not ended before November. There were 11 deaths from plague in London.

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1622	3035	17	82	45	14·8	Greatest number of burials in November. Frost in January. All rivers of Europe and the Zuyder Zee frozen. Distress in country for want of work and money. Reported that in Hessen the air last harvest and present summer has been excessive wet. In London 16 died of plague.
1623	3046	14	81	78	25·6	Greatest number of burials in July. In London 17 deaths from plague this year. Spotted fever raged in England. Scarce and dear time. Wheat 52s. per quarter.
1624	3057	15	70	88	28·8	Greatest number of burials in October. 11 deaths from plague in London. Plague very fatal at Amsterdam, 11,795 died from it this year. Wheat 48s. per quarter.
1625	3068	14	86	169	55·1	Of these burials 78 are recorded as dying of pest. The greatest number of burials in July. In London plague very rife; 35,417 died from it, the total deaths being 54,265. Early spring described as wholesome. Early summer unusually cold. In June ceaseless rain. In the country hay harvest spoilt. Corn only half a crop. Air full of black mists and damp, with no dew-drops at night but a vaporous smoke.
1626	3079	13	65	114	37·0	Of these burials 22 are reported as due to pest. In London the deaths from plague had dropped to 134. October was the month with most burials. In April snow fell. 12th June a great hurricane in London. July was very wet and unseasonable. Much hay spoilt. Plague increasing in the country. A general frost on 2nd August. The day following the air cleared and fair weather afterwards. Threatened invasion by Spain. In Nov. weather cold.
1627	3091	22	80	96	31·1	The greatest number of burials occurred in June. In London only four deaths from the plague. Great gale 28th January.
1628	3102	14	88	103	33·2	Pest mentioned but numbers not recorded. Greatest number of burials in September. Small-pox in London. Spring and summer to mid-July wondrous cold and wet. In January a gale. On 4th November a great flood.
1629	3113	19	80	58	18·6	Greatest number of burials in July. No deaths from plague in London this year. In February floods. Before and after Michaelmas had fallen a wondrous amount of rain. Corn rises in price. Famine in England.
1630	3124	22	61	82	26·3	Greatest number of burials in April and June. 1317 deaths from plague in London. Dearth in England; boiled turnips used in bread in London. Very dry summer.
1631	3135	12	No entry	132	42·1	Recorded that 75 of burials due to pest. In June the largest number of burials. In London 274 deaths from plague recorded. Great dearth in England. Wheat 68s. per quarter.

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1632	3147	20	No entry	92	29·2	In April the largest number of burials. In London eight deaths from plague recorded. Hot summer. Plague ended about August at Lincoln.
1633	3158	14	99	52	16·5	In March largest number of burials. Flood recorded at Newcastle-on-Tyne and 120 persons drowned. No deaths from plague in London.
1634	3169	17	80	60	18·9	The months of May, Sept., and Oct. had most burials. One death from plague recorded in London. The Thames froze over and a great snow recorded. A great frost recorded at Lincoln.
1635	3181	19	84	69	21·7	In January and February most burials. No deaths from plague in London. Severe frost and snow in January. Floods in February with thaw. Summer hot and droughty. Winter temperate, neither dry nor wet.
1636	3192	21	81	55	17·2	In March greatest number of burials. Plague in London caused 10,400 deaths. This year extremely dry. Forward spring. From March to August no rain. 4th November a great storm.
1637	3204	11	96	74	23·2	In October and November most burials. Plague in London caused 3082 deaths. Summer hot and dry. A great flood mentioned but when not stated.
1638	3215	18	90	98	30·6	Most burials in November. 363 deaths from plague in London. This year mentioned as one of excessive drought. In harvest an extreme hot time.
1639	3227	14	74	83	25·8	Most burials occurred in May. Plague caused 314 deaths in London. On 25th December great storm of wind at Croydon damaged church. In December commenced long frost of 29 weeks.
1640	3239	15	90	87	26·9	In September most burials took place. The plague in London caused 1450 deaths. Frosts beginning of year. Floods in April in rivers Welland and Nene. Springs did not break till Christmas. 11th to 14th October a most severe frost.
1641	3250	14	87	128	39·4	Most burials in October. 3067 deaths from plague in London. Tempestuous weather in September. Massacre of Protestants in Ireland.
1642	3262	16	96	71	21·8	Most burials occurred in December. 1824 deaths from plague in London. In August gales reported. Civil war broke out in April, after which registers are not to be so implicitly trusted as before.
1643	3274	22	95	99	30·2	In October most burials took place. 996 deaths from plague in London. Spring moist. Summer was excessively hot. In July appears to have been much rain which prevented army from laying siege to

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1644	3286	1 entry	no re- turn	18	—	Burghly House. November 6th a hideous storm, snowy weather. Fever in the armies of both the King and Parliament. A year of excessive drought.
1645	3298	No re- turn	no re- turn	no re- turn	—	Imperfect record. Seven months without any record. Plague in London caused 1492 deaths. In January snow and very cold. In May thunderstorms with hail large as walnuts.
1646	3310	1 entry	62	83	25·1	Imperfect record. In London 1871 deaths from plague recorded. In February weather extremely cold and tempestuous. In Mar. great floods. Summer hot and dry.
1647	3321	2 entries	37	90	27·1	Imperfect as to weddings. In September greatest number of burials. In London 2436 died of plague. In January snow fell and was excessively cold. Year said to have been excessively hot.
1648	3333	6 entries	no re- turn	103	30·9	In March greatest number of burials. In London 3597 died of plague. Weather variable in England. Small-pox prevalent in some parts of the country. Wheat 73s.8d. per quarter.
1649	3346	2 entries	no re- turn	100	29·9	Record not complete. In June greatest number of burials. In London 611 deaths from plague and 400 deaths from small-pox. This was an exceedingly wet year, neither frost or snow for more than six days. A murrain among cattle, of which many died.
1650	3358	5 entries	no re- turn	127	37·8	Record not complete. In September greatest number of burials. In London 67 deaths from plague and 1190 from small-pox. Wheat was 85s. per quarter. January the Thames frozen over. A famine year. Sun hot in June. Very sickly and mortal autumn. Charles I. beheaded 30th January. A disturbed period.
1651	3370	5 entries	no re- turn	94	27·9	Record not complete. In August greatest number of burials. In London 15 deaths from plague and 184 from small-pox. Wheat still dear, sold at £4 per quarter. Black Assize at Croydon. Part of year great drought.
1652	3382	6 entries	52	87	25·7	Record not complete. In November the greatest number of burials. In London 16 deaths from plague and 1279 from small-pox. Wheat still dear, sold at £3 to £3 4s. per quarter. In January hard frost, long duration. 25th May a tempest after a drought of four months. Warm and dry summer. A great drought.

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1653	3394	10	66	85	25·0	In November the greatest number of burials. In London 6 deaths from plague and 139 from small-pox. Civil Registrars appointed. Wheat became cheaper, 35s.6d. per quarter. Great drought and excessive heat in England.
1654	3406	9	67	105	30·8	In December the greatest number of burials. In London 16 deaths from plague and 812 from small-pox. Dry season, springs and rivulets quite dried up by reason of the precedent drought which raged in 1651, 1652, 1653. In July great heat.
1655	3419	6	80	82	24·0	In March the greatest number of burials. In London 9 deaths from plague and 1294 from small-pox. Floods in Jan. Excessive snow and rain this winter. Dry summer.
1656	3431	No re- turn	81	87	25·4	Records not complete. In March the greatest number of burials. In London 6 deaths from plague and 823 from small-pox. In January a great frost. In July excessive hot dry summer. The drought lasted to the spring of this year.
1657	3443	2 entries	83	95	27·6	Records not complete. In August the greatest number of burials. In London 4 deaths from plague and 835 from small-pox. In summer it was excessively hot, followed by winter which was severely cold. In August a prodigious rain in London.
1658	3456	5	88	83	24·0	In July the greatest number of burials. In London 14 deaths from plague and 409 from small-pox, severe winter. King of Sweden crossed Baltic with his army on the ice. In June storms of rain and hail. In August tempestuous wind. In August excessive heat. On 3rd September great storm. Highest flood recorded on Seine in February. Flood recorded at Faversham in May. Wind northerly for six months.
1659	3468	4	71	63	18·2	In May and June the greatest number of burials. In London 36 deaths from plague and 1523 from small-pox. Anarchy and confusion in country. In October the Army turned out the Parliament. Severe frost, snow lay deep in January in parts of the country. Wheat 66s. per quarter.
1660	3481	2	65	79	22·7	In May greatest number of burials. In London 14 deaths from plague and 354 from small-pox. Very cold winter. Seasonable spring. Aubrey says Croydon Bourne flowed. In November floods. Restoration of Charles II. Wheat 50s. per quarter.
1661	3493	5	66	92	26·3	In September the greatest number of burials. In London 20 deaths from plague and 1246 from small-pox. The weather unseasonably warm. In December young crop of apples and pears on trees and young rooks. In autumn the season very sickly. Wheat 70s. per quarter. Observance of Lent restored this year by Charles II.

Year	Popula-tion	Marri-ages	Bap-tisms	Bur-ials	Death rate per 1000	
1662	3506	8	61	99	28·2	In March greatest number of burials. In London 12 died of the plague and 768 of small-pox. In January a Fast Day to pray for more seasonable weather which had hitherto been like summer, just as if it had been the middle of May or June. In February dreadful storms, wind, rain, and thunder. July ill weather. December 1st frost. Thames frozen. Wheat 74s. per quarter.
1663	3519	15	84	90	25·6	In March the greatest number of burials. In London 9 died of plague and 411 from small-pox. A severe winter. In February frost. July extraordinarily wet and cold season. In July Fast Day kept by Parliament on account of the present unseasonable weather. Had no summer. Frost on 28th August. Rot in sheep and other animals due to damp wet weather. In October plague very prevalent at Amsterdam and feared here.
1664	3532	9	114	72	20·4	In February the greatest number of burials. In London 6 died from plague and 1233 from small-pox. War declared against the Dutch among whom the plague was prevalent. In June warm and pleasant. August thunderstorms. In December cold and frosty season. Wheat 36s. per qr.
1665	3544	16	83	191	53·9	It is recorded that 121 of the burials were due to pest, this being the great plague year in London when 97,306 persons died, of which 68,596 said to be caused by plague. Small-pox in London caused 655 deaths. In 1664 began a hard frost which continued to the end of March this year. This year was hot and dry. April dry and dusty, June very warm, July some extraordinary heat. In November was hard frost. December a day or two frost, later close and warm. Croydon Bourne reported by Aubrey to have flowed. The month of October at Croydon had the greatest number of burials. In London the deaths from plague went on increasing until 7th September, after which they gradually declined. During the plague in London a general calm and serenity of weather as if both wind and rain had been expelled the kingdom. Wheat 43s. per quarter. Plentiful year corn but not of grass or hay.
1666	3557	16	98	86	24·2	In February and March greatest number of burials. In this record 20 are mentioned as dying from pest. In London 1998 deaths from plague are recorded and 38 from small-pox. The spring and summer driest in memory of man. Fire of London commenced 2nd September. In

Year	Popula-tion	Marri-ages	Bap-tisms	Bur-ials	Death rate per 1000	
1667	3570	9	78	108	30·3	October weather very hot so that famine was feared. On 13th October a whirlwind in Lincolnshire did great damage. In November rainy dirty weather. In December frosty and dry. In August greatest number of burials. In London 35 deaths from plague and 1196 from small-pox recorded. In January frost. Dry summer, ground burned and dry. August 11th cold. Fever, small-pox, and dysentery rife in the country.
1668	3583	10	92	109	30·4	In March greatest number of burials. In London 14 deaths from plague and 1987 from small-pox. January rain. A dry season in April. May wet with floods. Rainfall observations commenced in France in October. Aubrey says Croydon Bourne flowed this year.
1669	3596	12	93	118	32·8	In October greatest number of burials. In London 3 deaths from plague and 951 from small-pox. Droughty year. Some springs lost more than half and others more than four-fifths of their usual flow. Spring and beginning of summer cold. July, August, September, and October were intolerably hot, succeeded by a winter with severe frost.
1670	3609	15	102	95	26·3	In August greatest number of burials. In this year in London no deaths from plague but 1465 from small-pox. In January a flood followed by frost. The winter most severe, especially about the end of January. In October hurricane in Northamptonshire.
1671	3622	10	96	81	22·4	In February and October greatest number of burials. In London 5 deaths from plague and 696 from small-pox. This year the weather was wet, stormy, and unseasonable, as had not been known for many years. September 13th a dreadful tempest.
1672	3635	7	104	86	23·7	In February greatest number of burials. In London 5 deaths from plague recorded, and 1116 from small-pox. 3rd Feb. an extraordinary snow. Great and violent rains fell in many parts of England in summer and harvest. A great flood in river Severn this year. Snow and freezing rain in December. Trees much broken.
1673	3648	6	91	62	17·00	In February and May greatest number of burials. In London 5 deaths from plague recorded and 853 from small-pox. 18th January, 39 ships wrecked on the coast of Northumberland. 21st March there was a great fall of snow at Lincoln. Cold, unseasonable, wet summer and harvest, and floods various parts of the country. Harvest was defective.

Year	Population	Marriages	Baptisms	Burials	Death rate per 1000	
1674	3661	1 entry	86	71	19·4	Record of marriages probably defective. In March greatest number of burials. In London 3 deaths recorded from plague and 2507 from small-pox. A great dearth. Wheat 68s. per quarter. Assent Bourne, Henley-on-Thames, flowed this year. In Feb. began frost which lasted till 25 March. It snowed eleven days together. Cold wet harvest. Great floods in some rivers.
1675	3674	9	74	87	23·7	In July greatest number of burials. In London 1 death from plague recorded and 997 from small-pox. An exceedingly dry summer and autumn. An epidemical disease profanely called the "Jolly Rant" was prevalent in some parts of the country. Heavy dry harvest.
1676	3688	6	91	86	23·3	In June greatest number of burials. In London 2 deaths from plague and 359 from small-pox. Cholera supposed to have been in London this year; 3321 deaths ascribed to griping in guts due to unusual heat of the weather. The Jolly Rant increased the bill of mortality in London. A very dry hot summer and harvest. 31st October a prodigious mist. 10th Dec. deep snow.
1677	3701	9	89	82	22·2	In October and November greatest number of burials. In London 2 deaths recorded from plague and 1678 from small-pox. In this year first record of quantity of rainfall that fell is known. It was taken at Townley, near Burnley, in Lancashire, the quantity falling in the year being 43·65 in., which is about the average fall for that place. The greatest amount of rain fell in June.
1678	3714	4	90	104	28·0	In September greatest number of burials. In London 5 deaths from plague and 1798 from small-pox. The rainfall at Townley was 42·67 in. Fall of over 5 in. occurred in May, September, October, and November. Autumn was hot. Least rain in August at Townley. Harvest defective. Wheat 56s. 11d. per quarter.
1679	3728	5	84	78	20·9	In August greatest number of burials. In London 2 deaths from plague and 1967 from small-pox. Rainfall at Townley 38·21 in. of which 8·35 in. in August and 6·16 in. in October. April had least rain, 0·92 in. Great darkness at noon-day on 12th Jan.
1680	3741	6	No entry	7 mths. No entry	—	Imperfect record. In London no deaths from plague and 689 deaths from small-pox. At Townley 44·28 in. of rain. In May and September the least rain. Summer said to have been excessively hot.
1681	3755	No entry	No entry	No entry	—	The record is blank. In London no deaths from plague but 2982 from small-pox. At Townley 33·26 in. of rain. Most rain in September. Very dry in January,

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1682	3768	1 entry	No entry	4 en- tries	—	April, and May. Sharp cold spring. Frost and snow in March. In April only one shower of rain in the month, and 25th May recorded by Evelyn that there had scarce fallen any rain since Christmas, and in June the drought continued. Memorable drought this year. It was evidently an unhealthy year as burials in London increased by 2918.
1683	3782	4	98	93	24·6	The record very imperfect, the 4 entries of burials occurred in December. The year was healthy, as in London there was a decrease of 3280 in the burials. The rainfall at Townley was 56·60 in., of which 9·86 in. fell in January. In April recorded that the season unusually wet. A frost in early part of September. The previous year the King had unjustly seized the Charters of the City of London and party matters were running high.
1684	3796	5	60	56	—	In March and August greatest number of burials. In London 2096 deaths from small-pox. The deaths in London slightly decreased this year. At Townley 37·16 in. of rain. Least rain in December, 0·37 in. Most in August 5·82 in. March was unusually hot and dry, and April wet. In December commenced a severe frost. The Thames frozen over.
1685	3809	4	89	9 en- tries	—	Record imperfect. 60 baptisms are recorded in June—none after. Five months without any record of burials. This year was an unhealthy year. The burials increased in London by 2615. The deaths from small-pox were 1560. At Townley 34·14 in. of rain recorded, and in January 0·32 in., most in November 5·79 in. The year commenced with frost which continued to 4th February. The Thames frozen over. Ice on Thames 11 in. thick. A frost fair on river. In winter trees split by frost. Hot summer. In August reported many trees died for want of rain. In November changed from temperate warm weather to excessive cold, rain, frost, snow and storm. Great drought this year. The Vicar of Croydon was tried at the Old Bailey for stealing a silver cup and burned in the hand and deprived of his living. It was after a new Vicar was appointed in June that the records are defective.
						Record imperfect—for 9 months no record of burials. In this year the burials in London slightly increased. The deaths from small-pox were 2496. The rainfall at Townley was 37·81 in., least in February 0·42 in., most in December 5·48 in. January long frost. Thames frozen but

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1686	3823	6	68	88	23·0	frost often dissolved and froze again. In May stated not had any rain for many months. The caterpillars devoured all the winter produce throughout the whole land. Two such winters and summers not known. Drought continued to 28th June when had plentiful rain after two years' drought. In November stated to have been hitherto a wet warm season. Charles II. died 6 Feb.
1687	3838	13	81	99	25·8	In October greatest number of burials. Was a healthy year, as burials decreased in London by 613 and the deaths from small-pox were 1062. At Townley the rainfall was 50·43 in. The least rainfall occurred in February 0·20 in., and most in August 8·70 in. In January reported to have been wet and mild. In June great storms of rain. July very rainy. At end of December little appearance of winter. Price of wheat 30s. 3d. per quarter.
1688	3851	12	No entry	144	37·4	Greatest number of burials occurred in December. Found no record of rain at Townley. In London there was a decrease in burials of 1149, and the deaths from small-pox and measles 1551. On 12th May great storm. Floods in summer. Wheat 29s. per quarter after harvest.
1689	3865	No entry	No entry	21	—	In January greatest number of burials. In London there was an increase of burials this year of 1461. Exceeding severe frost, nearly all the birds died. A cold and backward spring. In November a hard frost. Revolution. Prince of Orange landed at Torbay. King James II. abdicates and flees to France. Wheat 40s. 11d. per quarter. Toleration Act passed this year. No record of rainfall at Townley has been found.
1690	3878	No entry	90	No entry	—	The record this year is blank as regards marriages and baptisms, and 21 burials are recorded in the first three months of the year, the rest being blank. The rain at Townley this year was 48·60 in., the least 1·20 in. fell in July, and the most 8·75 in. fell in March. There was an increase in the burials of London of 581. In January a long frost and deep snow. In April seasonable weather. In June drought. August seasonable. In November wet. Floods in October. Bridges broke down in Norfolk and York. William & Mary crowned 11th April.
						The record imperfect this year, but was probably a healthy year as in London there was a diminution in the burials of 2041. In January reported that hitherto the winter had been exceedingly wet, warm, and windy. On 11th Jan. there was a storm

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1691	3893	4	83	30	—	<p>with snow. Year wet except August, fine for some time but at end cold. Rainfall at Townley was 42·91 in., the least rain fell in April 0·78 in., and the most in October 7·65 in. At Paris this year the rain was 24·87 in.</p> <p>Record imperfect, the 30 burials recorded in last 3 months of the year, all the rest blank. The year was probably unhealthy as an increase of 1230 burials in London. The rainfall at Townley was 31·40 in., the least rainfall 1·12 in. was in February, and the most 4·76 in. was in March. In Paris the rainfall this year was 15·4 in. A frosty, dry winter, a hot dry spring, and a hot summer. November a dry and warm season like spring. Wheat 29s. per quarter.</p>
1692	3907	10	100	93	23·8	<p>In January, the greatest number of burials occurred. In London this year there was a decrease of 1817 burials. At Townley the rainfall was 43·72 in.; the least 0·54 in. occurred in January, the most 8·92 in. fell in December. At Paris there were 24·14 in. of rain. In January a frosty and dry season. Feb. 7th an extraordinary snowstorm. Up to end of April very cold and unseasonable. In June a wet season with floods. The whole summer exceedingly wet. In August still wet. October cold. No frost referred to. Kindly winter.</p>
1693	3921	17	92	101	25·8	<p>August had the greatest number of burials. In London this year the burials increased by 85. The rainfall at Townley was 42·30 in. The least rain 0·78 in. occurred in February and the most 6·68 in. in August. At Paris the rainfall was 24·18 in. A mild winter, snow in February followed with wet weather all spring. In June wet hay harvest. October and November wet. In December thunderstorms. Corn dear. Wheat 67s. 8d. per quarter. Much corn spoiled.</p>
1694	3935	11	89	132	33·6	<p>The greatest number of burials occurred in March and August. The burials in London increased 3141. The Townley record of rainfall not found. Rainfall in Paris 21·07 in. May 6th scarce a shower fallen since the beginning of April. In May and June showers. July steady weather. August stormy, unseasonable weather. Dec. 28th Queen died from small-pox.</p>
1695	3949	27	103	119	30·1	<p>In February greatest number of burials. The burials in London decreased this year by 5053. No record of Townley rainfall found. The rainfall of Paris was 20·96 in. In January the Thames was frozen over. Frost for 5 weeks. Also end of March had frost. In April weather backward. July</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1696	3963	21	103	112	28·3	a very wet season. In August cold and frost after much wet. October mild. December dark and misty weather. Wheat 64s. per quarter. Window tax first established.
1697	3978	23	97	98	24·6	In October greatest number of burials. In London the burials diminished by 409. The rainfall at Townley was 40·75 in. The rainfall at Upminster, Essex, for 10 months was 23 in. Rainfall at Paris 20·76 in. In February wet. In March frost and cold. A cold wet summer. A fine harvest after cold and wet summer. October stormy weather. In November stormy. December frost and snow.
1698	3992	18	89	109	27·3	The greatest number of burials was 15 in August, of which number 6 were executed. This was an unhealthy year. The increase in burials in London was 2332. The rainfall at Townley was 41·40 in., of which the least quantity 0·82 in. fell in April, and the most in September 9·38 in. In this year and some years subsequently, there is a rainfall record at Upminster in Essex. The rainfall was 15·52 in., of which least 0·36 in. fell in April and the most in August 2·80 in. This was a dry year in Essex. In Paris the rainfall was 21·68 in. In January and February severe frost and snow. March and April cold. Hot beginning of May. Cold in June and July. August daily rain. Corn grew in the ear. September dry. Latter part October a pleasant month. On Nov. 25th ice 3 in. thick. December latter end was as hot as August. Wheat 71s. per quarter.
1699	4007	20	99	93	23·2	January and May the most burials. There was a decrease of burials in London this year of 787. The rainfall at Townley was 37·98 in. The least 1·18 in. fell in February, and the most 4·94 in. fell in November. The rainfall at Upminster was 24·46 in., of which 0·26 in. fell in Feb. and 3·41 in. in July. Rainfall at Paris 23·20 in. In April sharp cold season. May 8th great snow and frost. Backward spring. Wet summer. Dec. warm. Much corn spoilt. Price of wheat 9s. per bushel.
						In Jan. and May the greatest number of burials. In London there was an increase of 612 burials this year. The rainfall at Townley was 39·30 in. The least rain 0·80 in. fell in May, and the most 6·54 in. in Feb. The rainfall at Upminster was 15·11 in. The least fell in June 0·08 in., and the most 2·70 in. in Oct. In Paris the rainfall was 19·93 in. In Feb. a great gale. Summer droughty

Year	Popula- tion	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1700	4021	21	105	110	27·4	after wet winter. October warm. In Nov. fog. Dec. bright and warm. Wheat still dear, 6s. 4d. per quarter. In Aug. the greatest number of burials. In London a decrease of 1352 burials. Rainfall at Townley 43·06 in. Least rainfall 1·52 in. was in March. Most 5·38 in. in Dec. At Upminster the rain was 19·03 in. The least rain 0·31 in. in March, the most 3·43 in. in Oct. At Paris the rainfall was 21·37 in. In Jan. hard frost. In Feb. mild, also March and April. Warm summer. After harvest price of wheat 33s. 9d. per quarter.
1701	4036	16	97	89	22·1	In Jan. the greatest number of burials. In London the burials increased by 1028. Rainfall at Townley 41·27 in. Least rain 1·22 in. in April, most rain 5·12 in. in Nov. At Upminster 18·69 in. of rain. Least rain 0·29 in. in April, and most rain 2·99 in. in Jan. In Paris the rainfall was 22·77 in. Early in Jan. deep snow which went suddenly, followed by gale and frost. In Aug. changed from heat to wet. In Oct. some frost. Nov. warm, Dec. dull with some frost.
1702	4050	29	92	86	21·2	In Nov. the greatest number of burials. In London 990 decrease in burials. Rainfall at Townley 51·55. in. Least rainfall 0·50 in. in March. Most rainfall 8·37 in. in Dec. Rainfall at Upminster 20·38 in. In March 0·47 in. and July 8·62 in. of rainfall. In Paris 17·45 in. of rain. Southerly moist condition, mild after March. In March dry. Summer frequent rains, summer hot, Sept.-Oct. moderate, in Nov. frost and snow and thaw. In Dec. frost, rain and snow. After harvest wheat 25s. 6d. per quarter.
1703	4065	¹ entry	95	85	20·9	The record of marriages probably defective. In March the greatest number of burials. In London 239 increase in burials. Rainfall at Townley 39·32 in. Least rainfall 0·73 in. in July, most 6·48 in. in Sept. At Upminster 23·99 in. of rain; least rain 0·67 in. in August and most 4·15 in. in May. South wind and mild to Jan. 18th, then cold and snow to 26th. Cold spring. April, May, June, and July wet months. Nov. 26th and 27th terrible storm. At Lady Day corn 26s. 8d., at Michaelmas 37s. 4d. per quarter.
1704	4079	No entry	90	17	—	From April to Dec. no record of burials. In London there was an increase of 1964 burials. Rainfall record at Townley for 1704 not complete. Rainfall at Upminster 15·81 in. Monthly rainfall not complete. At Paris the rainfall was 21·20 in. Was

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1705	4094	No entry	90	No entry	—	a dry year, grass burnt up. Great scarcity of water for cattle. In Jan. frost. Dry Feb. Little rain in June, July, Aug. and part of Sept. Exceeding dry Oct., warm Nov., rain and wind, Dec. variable. Price of wheat at Lady Day 51s. 7d., and at Michaelmas 30s. 10d. per quarter.
1706	4109	No entry	50	No entry	—	Record defective. In London there was a decrease in burials of 587. The amount of rainfall this year at Upminster was 16.93 in., of which 0.22 in. fell in Jan. and 4.34 in. in Dec. At Paris the rainfall was 14.82 in. In Feb. fine weather. March very dry, June hot, July fine with some little thunder. Aug. showery, Sept. begins cold and rainy, afterwards dry and hot. Oct. variable, Nov. cold with frost and snow. Dec. wet. Price of wheat 26s. 8d. per quarter.
1707	4124	4	No entry	12	—	The 50 baptisms recorded to Sept. Record defective. In London there was a decrease of 2250 burials this year. Rainfall at Upminster 24.29 in., and at Paris 16.32 in. Jan. frost and snow. Feb. dry. March and April cold, most part of May and June dry. After July 10th to beginning of Sept. wet. Oct. variable with storms. Nov. frost and rain. Dec. mostly wet. Year ends very cold. Price of wheat 23s. 1d. per quarter.
1708	4139	4	No entry	13	—	Records very defective. In London there was an increase of 1753 burials. The rainfall at Upminster was 16.31 in., the smallest rain 0.18 in. occurred in Aug., and the most 2.90 in. in Sept. In Paris there was 19.11 in. of rain. Moderate weather to the end of Feb.; March ends dry and cold; April and May little rain; June and July little rain; on July 8th called hot Thursday, many persons and horses died from the effects of the heat, afterwards rain. In Aug. first part cold; Sept. variable with rain, Oct. wet, Nov. alternate winds and calms; December little frost and rain. Price of wheat 25s. 4d. per quarter.
						Records very defective. In London there was a decrease of 309 in the burials. The rainfall at Upminster was 19.24 in.; the smallest amount, 0.46, fell in February and the most 2.94 in. fell in August. At Paris 19.51 in. fell. January a wet rainy month. In February frost and snow, March showery, April warm, May and June dry and cold, July cold and wet, August warm, Sept. little rain, Oct. cold, Nov. at end snow lay 2 in. deep. In Dec. dry, end of December began cold weather. Wheat 32s. 10d. per quarter.

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1709	4154	32	88	83	20·0	Greatest number of burials in March. In London there was an increase of 509 burials this year. At Upminster there was 26·56 in. of rain, and at Paris 23·21 in. of rain. Severe frost commenced Jan. 3rd. Thames frozen. Frost and thaw till 12th March. Backward spring; little appearance of spring at end of May. June first half fine, latter half wet. July first half wet. August most part very hot and some days cold. Sept. wind and rain. Nov. mostly mild, ended cold. Dec. ended with cold. In May wheat was 10s. per bushel.
1710	4169	16	83	128	30·7	In November greatest number of burials. In London there was an increase of 2820 burials. The rainfall at Upminster was 18·37 inches, and at Paris 17·10 in. Jan. weather moderate, little snow and frost. Feb. mild and foggy, little rain. March little rain, cold and backward spring. Drought April 5th to middle of June. Rain in August, but drought continued to middle of Sept. Oct. mild, Nov. warm and dry. Dec. rain and floods. Year of dearth. Exportation of corn prohibited. Wheat 69s. 4d. per quarter.
1711	4184	17	89	95	22·7	In Sept. greatest number of burials. In London there was a decrease of 4787 in the burials. The rainfall at Upminster was 23·60 in., and at Paris 26·84 in. In Jan. moderate weather from middle of Jan. to Feb. 4th. Severe frost, then a thaw, followed by frost and thaw. March showery, April some cold rains, May fine but not hot. June began hot followed by hail and rain; July variable, some cold days and rain. August variable. Sept. fine, Oct. squally, Nov. warm with great deal of rain. Dec. began fine, ended with frost and snow. Wheat 42s. 8d. per qr.
1712	4199	11	93	90	21·4	In May the greatest number of burials. In London there was an increase of 1365 burials. At Upminster there was 23·76 in. of rain. Jan. begins mild, has some frost and squally weather. Feb. hail and snow, no large amount of rain. March squally, frost and snow but little rain. April rain and sleet, with some hot days. May and June fine months, July hot weather. A glorious month. Aug. rain, Sept. showers, Oct. and Nov. rainy months with some frost. Dec. at beginning hard frost, afterwards wet and foggy, and snow lay upon the ground. Wheat 36s. 7d. per quarter.
1713	4214	12	67	73	17·3	In May the greatest number of burials. In London there was a decrease of 141 burials. The rainfall at Upminster was 23·16 in. Jan. frost, Feb. rainy, March

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1714	4229	12	90	148	35·0	cold winds and showery ; April cold and squally ; backward spring. May partly fine, partly rain and hail. June but little rain. July rainy. Aug. began great rains and stormy weather. Some days fine and warm. Sept. began with squally weather with some hail and snow, afterwards warm with sunshine. Oct., Nov. and Dec. all very rainy. In Dec. weather so warm that primroses in bloom. Wheat 40s. 4d. per quarter. In Aug. the most burials. In London there was an increase of 5512 in the burials. Very dry year. The rainfall at Upminster was but 11·19 in. At Paris rainfall 14·75 in. Springs low or quite failed. A murrain among milking stock in neighbourhood of London. Jan. was cold with but little frost or rain. Feb. mild and fair, March fine with some frost. In April weather set in cold with hail and snow; May, June and July mostly dry. August some thunderstorms. Showery Sept., variable Oct., mild; Nov. mild dry weather; Dec. variable, mild, frost, rain. At end of year primroses bloomed. Wheat 39s. 9d. per quarter.
1715	4245	28	96	85	20·0	Feb. had most burials. In London was a decrease of 4337 in the burials. At Upminster 25·78 in. of rain. The greatest amount fell in Aug. when 4·10 in. fell, and the least amount 0·51 in. fell in Dec. Jan. commenced with hard frost lasting into Feb., afterwards Feb. warm. The spring dry; June, July and Aug. wet; Sept. a fine month; Oct. warm with rain to commence, hot in some parts, then rain and warm. In Nov. variable, warm to frost, rain and snow. Dec. introduced a very severe winter. Wheat 34s. per qr.
1716	4260	18	97	77	18·1	May had the most burials. In London there was an increase of 2204 burials. At Upminster the rainfall was 15·77 in., the most 3·15 in. fell in Oct. and the least 0·35 in. fell in Feb. In Jan. very severe weather. The Thames was frozen and a frost fair held. In Feb. foggy, cloudy, hail, snow, frost and thaw. March mostly cold, frost and snow. April began with frost, ended with warm weather. May cold and dry, June showery. In July failure of water supply, ponds dry. Aug. pretty dry, Sept. moderate. Oct. at first temperate, rain followed. Nov. dry, Dec. finished with frost. Wheat 37s. 11d. per quarter.
1717	4275	14	113	131	30·6	The greatest number of burials took place in Sept. In London there was a

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1718	4291	16	109	95	22·1	decrease of 990 in the burials. Rainfall records ceased or not available. Jan. and Feb. dry months with foggy days. March variable, frosts, fogs and rain; April dry and cold. May temperate; June begins dry and hot, later some showers. July little rain, mostly hot and dry. Aug. a dry month, Sept. hot with occasional thunderstorms, Oct. a warm month and dry. Nov. little rain and frost, Dec. a mild month. The year looked upon as cold. The summer after the middle warm and dry. Harvest cold and wet. Smallpox was the fatal disease. Wheat 40s. 7d. per quarter.
1719	4306	16	112	110	25·6	The most burials in Feb. In London there was an increase of 3077 in the burials. This winter very cold, much frost and snow. Summer hot and dry, especially July and Aug., and continued so most of the harvest. Wheat 30s. 8d. per quarter.
1720	4322	8	106	148	34·2	In Aug. and Oct. the greatest number of burials. In London there was an increase of 1824 in the burials. From the 1st of May it was one of the hottest summers known; the warmth continued to Nov., which month was uncommonly dry; the whole winter after drier and warmer than ordinary. Wheat was 27s. 8d. per quarter.
1721	4337	17	124	124	28·6	In June greatest number of burials. In London there was a decrease of 2893 in the burials. After a very severe winter, a genial Feb. The summer droughty, but not so much as last. A terrible outbreak of plague took place in Marseilles. The price of wheat was 29s. 3d. per qr.
1722	4353	17	113	140	32·2	In Oct. greatest number of burials. In London there was an increase of 688 in the burials this year. The beginning of Sept. was cold, moist and rainy. From Sept. to Nov. pleasant weather. Winter mild and little frost. Wheat 29s. 8d. per quarter.
1723	4369	21	135	165	37·8	In May greatest number of burials. Among the burials were 5 executed in March. In London there was a decrease of 392 in the burials. The spring and to the middle of summer was cold and wet. In May a flood in Rippenden Vale near Halifax did much damage, and several persons drowned. Wheat 28s. 5d. per qr.
						In May and Oct. the greatest number of burials took place. Of the burials 4 were persons executed in April. In London there was an increase in the burials of 3447, smallpox being very fatal.

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1724	4385	19	128	129	29·4	<p>There was 21·24 in. of rain recorded at Widdington in Northumberland between April, 1722, and March, 1723. The rainfall at Paris this year was very deficient, being only 7·67 in. There was a general drought. Warm summer and very dry year. It was a dry year also in Ireland. Wheat 27s. 5d. per quarter.</p> <p>The burials were most in the months of April, Sept. and Oct. In London there was a decrease in the burials of 3245. The rainfall at Paris this year was 12 in. The summer cold and rainy to the middle of harvest, then a clear pleasant season to the beginning of winter, then frost and rain. Though a wet cold year, said to be very healthy. It is recorded that the years 1724 and 1725 very dry years. The wells about Braintree failed of their water, and had to be deepened. Reported to have been a very wet summer in the vicinity of Newcastle-on-Tyne. Wheat 29s. 3d. per quarter.</p>
1725	4400	10	136	109	24·8	<p>In March and Nov. greatest number of burials. In London there was a decrease of 429 in the burials. At Paris there was 17·5 in. of rain. Dry from middle of Jan. to middle of April, then cold and wet till Aug. Autumn variable. Winter cold, snow and rain. Wheat 38s. 4d. per qr.</p>
1726	4416	12	121	128	29·0	<p>In Sept. the greatest number of burials. In London there was an increase in the burials of 4124. The rainfall at Southwick near Oundle was 26·7 in., the least 0·3 in. fell in Aug., and the most 5·2 in. fell in Sept. In Jan. snow, rains, floods, and great inundations over all Europe. Spring dry, summer variable, autumn variable; winter for most part open. Wheat 36s. 4d. per quarter.</p>
1727	4432	15	114	154	34·8	<p>In Sept. the greatest number of burials. In London a decrease of 1229 in the burials. At Southwick 24·8 in. of rain, least 0·3 in. in Aug. Most 4·3 in. in May. Until the end of Feb. cold, snow and rain. March and April comparatively dry, May wet, June wet, July moderate, Aug. dry, Sept. and Oct. cold, Nov. dry, Dec. frost. Wheat 33s. 2d. per quarter. Scarcity of corn occasioned by excess of exportation.</p>
1728	4447	13	127	168	37·8	<p>In March the greatest number of burials took place. In London there was a decrease of 608 in the burials. The rainfall at Southwick was 26·26 in., the least 0·86 in. fell in Sept., the most 4·00 in. in Jan. On the 12th May recorded that there was a violent hailstorm at Croydon, which broke most of the windows facing</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1729	4464	11	106	172	38·5	<p>the storm. Jan. cold and snow, Feb. warm for the season, March changeable, April began warmer than ordinary; June hot, July cold and rain, Aug. and Sept. dry and cold. Oct. and Nov. damp, latter end of Nov. snow. In Dec. snow followed by frost. Wheat 43s. 1d. per quarter.</p> <p>In Jan. greatest number of burials. In London there was an increase of 1712 in the burials. Rainfall at Southwick 23·51 in. The greatest fall 5·32 in. occurred in Sept., the least fall 0·16 in. in Jan. A rain gauge in Kent 16 miles south-east from London gave 23·53 in. of rain. Jan. and Feb. cold with frost, March cold and dry, April and May cold with rain, June a dry month; July to Nov. moderate, rain. A dry spring, summer, and harvest. Nov. rainy; Dec. rains decreased at end of year, pleasant and clear like April. Said that in Kent about Canterbury since Jan., 1725, they have had little rain or snow, so that in several summers springs, brooks, and rivulets were dried up, and so continued till 1734. Wheat 37s. 6d. per quarter.</p>
1730	4481	10	92	143	31·9	<p>In April greatest number of burials. In London there was a decrease of 2961 in the burials. At Southwick the rainfall was 21·43 in. In Kent it was 22·92 in. At Southwick most rain 3·39 in. in June, and least 0·45 in. in Jan. Little frost or snow in Jan.; little rains in Feb. and March with snow. In April warmer. End of April and beginning of May dry cold wind, then followed cold rains to end of July. In Aug. very dry. Sept. moderate rain. Sept. to end of Nov. moderate rains. Dec. a dry month with little snow. Wheat 28s. 10d. per quarter.</p>
1731	4497	17	132	141	31·4	<p>In March, Sept. and Dec. the burials most. In London there was a decrease of 1499 in the burials. At Southwick the rain was 17·57 in. March the driest month with 0·15 in. of rain, and June the wettest with 3·38 in. With the exception of June this was a dry year. The drought rose to a great calamity in the South and West of England, especially in July, Aug. and Sept.; as weather very hot as well as dry, the springs failed in most places. Wheat 25s. 6d. per quarter.</p>
1732	4513	14	130	131	29·0	<p>In Dec. greatest number of burials. In London there was a decrease of 1904 in the burials. At Southwick the rainfall was 20·5 in. The least rainfall 0·6 in. in Oct., the most 3·7 in. in May. In Kent rainfall was 18·95 in. In Jan., Feb. and</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1733	4529	10	132	110	24·3	<p>March great scarcity of water. Failure of springs. In April ponds still dry, then cold to middle of June, after which warmer; hot dry harvest. Was warm rain in Oct. In Nov. cold, rain, snow and frost, end of Dec. warm. Wheat 21s. 1d. per quarter.</p> <p>In Nov. greatest number of burials. In London in this year 5875 increase in burials. The rainfall at Southwick was 17·5 in. Was least 0·05 in. in May, and most 3·6 in. in Aug. In Kent the rainfall was 20·0 in., and at Crane Court, London, 18·90 in. Jan. and Feb. dry and warm, March cold, rainy; April and May cold and dry, June and July hot. Rain in Aug.; Oct. and Nov. dry months. Dec. warm and fine. Aug. to Jan. was summer weather. Birds began to build in Dec. Wheat 22s. 5d. per quarter.</p>
1734	4546	7	124	146	32·1	<p>In Aug. greatest number of burials. In London decrease of 3171 in burials. The rainfall at Southwick was 27·5 in. Least rain 0·5 in. fell in Jan., the most 5·1 in. in May. In Kent the rainfall was 29·72 in., and Crane Court, London, 24·57 in. With the exception of Feb., from Jan. to end of April a very dry time. May, Aug. and Dec. were wet months. In Jan. a little frost, otherwise warm weather. Birds bred before usual time. Cold in May. A wet summer and very wet Dec., followed by mild winter. Wheat 30s. 8d. per quarter.</p>
1735	4562	10	119	133	29·2	<p>In Oct. the greatest number of burials. In London a decrease of 2524 burials. The rainfall at Southwick was 25·0 in. The least rain fell in Feb. 0·7 in. The most rain 3·2 in. fell both in Aug. and Sept. At Crane Court, London, the rainfall was 22·83 in. In Jan. reported that a great storm and much damage done at Carshalton Park; that rivers were in flood after the gale. In Aug. a violent storm did much damage to shipping. Aug. and Sept. wet; the winter following scarcely any frost. Wheat was 34s. per qr.</p>
1736	4579	8	111	146	31·9	<p>In Dec. the greatest number of burials. In London there was an increase of 4043 in the burials. The rainfall at Southwick was 24·4 in.; in April and Nov. the rain each month was 0·6 in. The most rain 6·0 in. fell in July. The long record at Lyndon, Rutlandshire, commenced this year; and for 8 months May to Dec., 17 in. of rain fell. In Jan. and Feb. only broken frost. Weather very wet in Feb. March cold and windy. April warm. April and May dry. At end of June</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1737	4595	15	131	153	33·3	showery. July 3rd, 4th and 5th, heavy downpour which made great floods. End of year good seedtime. Wheat 31s. 10d. per quarter. In March the greatest number of burials. In London there was an increase of 242 in the burials. At Southwick the rainfall was 24·1 in.; the least amount 0·4 in. fell in April, and the most 5·7 in. fell in Aug. At Lyndon the rainfall was 20·94 in. January a month of deficient rain. Feb. and March rainy; after March dry most of summer, but variable as to heat; 28 $\frac{1}{2}$ in. depth of snow between 6th Feb. and 6th March. The ground much burnt May to July. May very hot. Heavy rain in Aug. and Sept., damaged latter part of harvest. An open winter followed. Most springs dried up by the drought. Scarcity of grass and hay. Wheat 30s. per qr.
1738	4612	14	118	126	27·3	In Nov. greatest number of burials. In London there was a decrease of 1998 burials. At Southwick the rainfall was 18·4 in.; the least fall 0·7 in. in Nov., and the most 3·4 in. in June. At Lyndon the rainfall was 17·16 in. In Jan. little rain not sufficient to open the springs. From 15th Jan. to 15th Feb. lovely spring weather. Feb. was a dry month, March cool and pleasant. April forward spring, but snow and sleet from 19th to 22nd. July and Aug. great drought. Sept. rainy, some frost at nights. Oct. mizzling foggy weather with warm wind. In Dec. great scarcity of water in many places. A year of drought. Wheat 28s. 1d. per quarter.
1739	4628	9	143	149	32·2	In May the greatest number of burials. In London there was a decrease of 393 burials. The rainfall at Southwick was 22·8 in.; the least 0·8 in. fell in Oct., and the most 3·1 in. in Feb. At Lyndon the rainfall was 21·66 in. In Jan. high winds, rain, snow, frost and fog. Feb. rain and snow. End of Feb. and early March spring weather; then followed a deep snow. In April cold and snow. May hot weather, to middle of June wet, end dry. Aug. cold and wet, Sept. variable. Oct. dry. In Nov. frost. Great frost commenced about Christmas, lasted for nine weeks. Very cold at end of year. Wheat 30s. 5d. per quarter.
1740	4645	4	111	170	36·6	In May the greatest number of burials. The burials in London increased this year by 5379. The rainfall at Southwick was very deficient, this year being only 13·75 in. At Lyndon the rainfall was

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1741	4662	7	113	271	58·1	<p>17·32 in., but for twelve months from July, 1739, to June, 1740, the fall was but 14·23 in. The first six months of this year were uncommonly dry; there fell at Southwick in this time but 4·6 in. of rain. The least rainfall at Southwick was 0·2 in. in Feb., and the most 3·18 in. in Dec. Jan. and Feb. severe frost. Thames and other rivers frozen. Fair held on the Thames. June and July colder than usual. An excessive drought continued till Aug. From Aug. to Dec. continual shift from rain to frost. The harvest late, Sept. being a cold month. So likewise was Oct. Storms frequent between Aug. and Jan. Scarce any grass and very little hay. Harvest was good. Wheat 40s. per quarter.</p> <p>In Oct. the greatest number of burials took place. In London there was an increase of 1358 burials. The burials in London most numerous in Oct. Fever was the principal cause of the deaths. In London 7528 burials due to fever. At Lyndon the rainfall was 15·70 in. From Feb. to May inclusive only 1·90 in. of rain. Sept. the month of greatest rain, when 4·94 in. fell; this being the most unhealthy year that has ever been recorded in Croydon. In Jan. it is recorded that at Tooting it was as warm as in May last. Feb. was tempestuous and cold with little rain; March temperate at beginning, cold, dry and frosty at end; April and May very droughy, end of May exceedingly hot; June was hot. In June several refreshing showers. July droughy, which continued to the 22nd Aug., then three days' rain, after that dry weather to 7th Sept., when rains commenced and continued during Sept. Oct. hazy and sultry. In Nov. frost at night. Dec. mostly calm and foggy, at end snow. In the three months Sept., Oct., and Nov., there were 112 burials. The same period was the most unhealthy in London. From Jan. to Aug. only half the rain that usually falls. A general drought, springs failed, cattle died for want of water. Wheat 36s. 11d. per quarter.</p>
1742	4679	5	118	95	20·3	<p>In Jan. the greatest number of burials. In London there was a decrease of 4686 burials. Fever caused 5108 deaths. The rainfall at Lyndon was 17·28 in., of which 3·14 in. fell in July and only 0·06 in. in March. In Jan. unseasonable warmth and frosts between. Feb. 16th to April 12th a drought. Cold beginning of May. June</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1743	4696	7	105	134	28·5	18th to July 22nd rain; after this no more rain till Sept. Oct. showery, Nov. drizzling rains, Dec. dry and frosty. Wheat 26s. 10d. per quarter. In Sept. the greatest number of burials. In London there was a decrease of 2283 in the burials. Fever caused 3837 deaths. The rainfall at Lyndon was 16·06 in., of which 5·23 in. fell in July, and only 0·01 in. in Sept. Very dry in Jan. and Feb., March cold with frost and snow, April frost and snow with sunshine between. April cold and droughy. Beginning of May hot, dry in June. Excessive rains in July, but from end to Oct. a drought. Oct. showery. Winter open and dry. Wheat 19s. 8d. per quarter.
1744	4712	6	106	100	21·2	In March greatest number of burials. In London there was a decrease of 4594 in the burials. The rainfall at Lyndon was 22·72 in., of which 3·48 in. fell in June, and but 0·82 in. in July. Year neither very wet or dry. In Jan. like a mild spring with slight frosts. In Feb. dry, roads good, and the springs low. All March and April soaking rains made springs flow. Good hay and corn crops. June wet, also Sept., Oct. and Nov. The rains of Oct. occasioned floods in divers parts. This was a healthy year, a year of floods. The price of wheat was 19s. 8d. per quarter.
1745	4730	11	116	144	30·4	In Oct. greatest number of burials. In London the burials increased 690. At Lyndon 20·55 in. of rain. The most 3·93 in. fell in Aug., the least 0·57 in. fell in Feb.; Jan. and Feb. dry months, cold, settled frost. March rainy and warm, yet a cold and backward spring. June and Aug. very wet months, Nov. tempestuous. Dec. dark and cloudy. On the whole, the year neither wet nor very dry. Wheat 21s. 9d. per quarter. In this year was the Rebellion raised by Prince Charles Edward, son of the old Pretender.
1746	4747	8	105	132	27·8	In March greatest number of burials. In London there was an increase in the burials of 6861. The rainfall at Lyndon was 18·43 in., the most 2·90 in. fell in June, and the least 0·46 in. fell in Aug. Year began with clear frost, and continued with rain or snow or frost to end of March. April and May dry months, May being hot. June was windy and wet. July, Aug. and Sept. dry months. The hay crop was small but well gotten. Murrain among cattle this and last year in neighbourhood of London, which afterwards spread over

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1747	4764	7	112	142	29·8	<p>the country. This hot dry summer the ground in low places, dug 2 ft. deep, was dry and dusty, as ashes at the bottom. Prices given for wheat vary from 17s. to 30s. 10d.</p> <p>In Dec. the most burials took place. In London there was a decrease in the burials of 2663. The rainfall at Lyndon was 24·09 in., the most 4·92 in. fell in Nov., the least 0·07 in. fell in Aug. From Jan. to March was showery and foggy. No great floods. March was cool. April and May warm. June to 20th cool, rest of the year hottest since 1719, and a great drought. No grass. A little rain in Sept., Oct. dry. Nov. rains began and continued into Dec. The heat which continued into Nov. was far beyond what is common at these seasons. In December snow and frost. Wheat 27s. 7d. per quarter.</p>
1748	4781	14	108	142	29·7	<p>In May the greatest number of burials. In London there was a decrease of 1625 burials. The rainfall at Lyndon was 17·22 in. The most 3·48 in. fell in July and the least 0·37 in. fell in Feb. Year begins with fine, mild, spring-like weather. End of Jan. cold and foggy. Feb. very dry and cold. In March snow fell. April and May showery. May was warm. June and July rainy but hot. Aug. showery, Sept. dry, Oct. showery, Nov. dry, Dec. showery. No rain to keep the springs open; from the first week in May to the 23rd Dec. there was a gradual scarcity of water, especially in Oct., Nov., and Dec. Wheat 29s. 3d. per quarter.</p>
1749	4798	10	116	141	29·4	<p>In Sept. the greatest number of burials. In London there was an increase of 1647 in the burials. The rainfall at Lyndon was 16·95 in. The most 3·04 in. fell in June, the least 0·55 in. fell in April. In Jan. thunderstorms, high winds, and floods. Feb. and March showery, April dry; May hailstorm on 15th, June cold and wet. On 3rd snow fell at Carlisle, on 16th at Stockport frost and snow. Frost in beginning of May did great damage in gardens about London. July and rest of year dry, and most part warm. In July a temperature of 88° in shade recorded. Wheat 29s. 3d. per quarter.</p>
1750	4816	6	117	119	24·7	<p>In Oct. the greatest number of burials. One burial due to person being murdered, and another was executed and hung on a gibbet. In London a decrease of 1789 burials. The rainfall at Lyndon was 16·41 in. The most, 2·35 in., fell in April, the least, 0·64 in., fell in Aug. In Feb. so warm that wall-fruit in blossom. The</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1751	4833	4	113	109	22·6	heat in July so great that fish perished. Temperature 96° in shade for several days. Great want of water. Dec. warm. Wheat 25s. 8d. per quarter. In March the greatest number of burials. One burial, a person executed. In London there was a decrease of 2699 in the burials. The rainfall at Lyndon was 27·16 in. The most rain, 4·99 in., fell in July, and the least, 0·92 in., fell in Feb. Wet Jan., spring wet and cold. Very rainy summer. In May snow in some parts of the country. Dec. variable, mostly fair, frosty, foggy, and cold. Wheat 27s. 5d. per quarter.
1752	4851	5	112	123	25·4	In Jan. the greatest number of burials. In London there was a decrease of 543 burials. The rainfall at Lyndon was 21·15 in. The most rain, 3·68 in., fell in July, and the least, 0·30 in., fell in Oct. In Jan. violent winds and rain. Wet summer. In Aug., after late heavy rains, 10,000 sheep died in South Wales. Autumn comparatively dry : Dec. mild and wet. Summer flowers in bloom, and magpies laid eggs and hatched them. In this year eleven days taken out of the Calendar, the 3rd Sept. being reckoned the 14th. Before this year, the legal year commenced 25th March. Wheat was 33s. 1d. per quarter.
1753	4868	5	118	90	18·5	In Sept. the greatest number of burials. One person executed in the year. In London there was a decrease of 1209 burials. The rainfall at Lyndon was 22·20 in. The most rain fell in Dec., 3·87 in. The least rain fell in Sept., 0·71 in. Snow in beginning of year. Floods in Feb. from melting snow and rain. July and Aug. wet. Sept. and Oct. little rain. Nov. and Dec. wet and snow. Floods end of Dec. from rain and melting snow. Wheat 35s. 4d. per quarter.
1754	4886	16	108	113	23·1	In Nov. the greatest number of burials. In London there was an increase of 3420 burials. The rainfall at Lyndon was 19·86 in. The greatest amount of rain, 3·85 in., fell in July, and the least, 0·11 in., fell in Sept. In Feb. weather very cold; the river Thames frozen above Kingston Bridge. Very wet June and July, and floods in many parts of the country. Summer wet, autumn fair. Lord Hardwick's Marriage Act came into force, and more marriages registered after this date. Wheat 27s. 5d. per quarter.
1755	4903	25	130	111	22·6	In June the greatest number of burials, In London a decrease of 779 burials. The rainfall at Lyndon 21·25 in., of which the most, 3·14 in., fell in Nov., and the least,

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1756	4921	13	122	183	37·2	0·84 in., fell in Feb. Jan. and Feb. dry. Great cold nights of 8th and 9th Feb. in London and neighbourhood. Spring wet; Aug. and Sept. rain. Wet summer. Wheat 26s. 9d. per quarter. In July the greatest number of burials. Of these burials, 40 died from small-pox in seven months, June to Dec. In London there was a decrease of 1045 in the burials. The rainfall at Lyndon was 25·19 in. The most rain, 4·26 in., fell in Aug., and the least, 0·69 in., fell in Feb. In Feb. violent wind in London. In April, heavy rains and cold weather. Summer very wet. Autumn variable. Winter frosty. Wheat 35s. 9d. per quarter.
1757	4939	18	102	115	23·3	In March and May greatest number of burials. In London there was an increase of 441 in the burials. The rainfall at Lyndon was 23·68 in. The most, 6·06 in., fell in Aug., and the least, 0·38 in., fell in June. In Jan. ice in river Thames. Spring cold and backward. Summer wet. Aug. very wet. Autumn dry. Dec. mild. Wheat 47s. 5d. per quarter.
1758	4957	20	111	85	17·1	In Feb. the greatest number of burials. In London there was a decrease of 3737 in the burials. The rainfall at Lyndon was 21·59 in. The most, 5·02 in., fell in July, and the least, 0·91 in., fell in Nov. In London 5·00 in. of rain fell in July. Spring cold and dry. Summer rainy. Autumn dry and fair. In Oct. a great gale. Considerable damage done to shipping in the Downs. Wheat 39s. 6d. per quarter.
1759	4974	24	112	103	20·7	In Jan. the greatest number of burials. In London there was an increase of 2028 burials. The rainfall at Lyndon was 20·94 in. The most of it, 3·73 in., fell in Aug., and the least, 0·38 in., fell in Feb. The winter 1758-9 mildest ever known. Spring early, summer fine and warm. It is reported that in June snow fell in Surrey and Kent, in some places lay on the ground 4 in. deep. Thunderstorms general in July. On 12 Oct. violent gale. Wheat 31s. 6d. per qr.
1760	4992	33	119	126	25·2	In Feb. and April the greatest number of burials. In London there was an increase of 226 burials. The rainfall at Lyndon was 18·29 in. The most, 2·53 in., fell in Oct., and the least, 0·39 in., fell in April. From Sept. 1759 to Aug. 1760 the rainfall at Lyndon was but 14·09 in. The first five months of year very dry. It is mentioned that end of Feb., about Chatham, most of the springs dried up. There was frost in Jan. and the Thames frozen, as reported that ships in the river driven

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1751	4833	4	113	109	22·6	heat in July so great that fish perished. Temperature 96° in shade for several days. Great want of water. Dec. warm. Wheat 25s. 8d. per quarter. In March the greatest number of burials. One burial, a person executed. In London there was a decrease of 2699 in the burials. The rainfall at Lyndon was 27·16 in. The most rain, 4·99 in., fell in July, and the least, 0·92 in., fell in Feb. Wet Jan., spring wet and cold. Very rainy summer. In May snow in some parts of the country. Dec. variable, mostly fair, frosty, foggy, and cold. Wheat 27s. 5d. per quarter.
1752	4851	5	112	123	25·4	In Jan. the greatest number of burials. In London there was a decrease of 543 burials. The rainfall at Lyndon was 21·15 in. The most rain, 3·68 in., fell in July, and the least, 0·30 in., fell in Oct. In Jan. violent winds and rain. Wet summer. In Aug., after late heavy rains, 10,000 sheep died in South Wales. Autumn comparatively dry : Dec. mild and wet. Summer flowers in bloom, and magpies laid eggs and hatched them. In this year eleven days taken out of the Calendar, the 3rd Sept. being reckoned the 14th. Before this year, the legal year commenced 25th March. Wheat was 33s. 1d. per quarter.
1753	4868	5	118	90	18·5	In Sept. the greatest number of burials. One person executed in the year. In London there was a decrease of 1209 burials. The rainfall at Lyndon was 22·20 in. The most rain fell in Dec., 3·87 in. The least rain fell in Sept., 0·71 in. Snow in beginning of year. Floods in Feb. from melting snow and rain. July and Aug. wet. Sept. and Oct. little rain. Nov. and Dec. wet and snow. Floods end of Dec. from rain and melting snow. Wheat 35s. 4d. per quarter.
1754	4886	16	108	113	23·1	In Nov. the greatest number of burials. In London there was an increase of 3420 burials. The rainfall at Lyndon was 19·86 in. The greatest amount of rain, 3·85 in., fell in July, and the least, 0·11 in., fell in Sept. In Feb. weather very cold; the river Thames frozen above Kingston Bridge. Very wet June and July, and floods in many parts of the country. Summer wet, autumn fair. Lord Hardwick's Marriage Act came into force, and more marriages registered after this date. Wheat 27s. 5d. per quarter.
1755	4903	25	130	111	22·6	In June the greatest number of burials, In London a decrease of 779 burials. The rainfall at Lyndon 21·25 in., of which the most, 3·14 in., fell in Nov., and the least,

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1756	4921	13	122	183	37·2	0·84 in., fell in Feb. Jan. and Feb. dry. Great cold nights of 8th and 9th Feb. in London and neighbourhood. Spring wet; Aug. and Sept. rain. Wet summer. Wheat 26s. 9d. per quarter. In July the greatest number of burials. Of these burials, 40 died from small-pox in seven months, June to Dec. In London there was a decrease of 1045 in the burials. The rainfall at Lyndon was 25·19 in. The most rain, 4·26 in., fell in Aug., and the least, 0·69 in., fell in Feb. In Feb. violent wind in London. In April, heavy rains and cold weather. Summer very wet. Autumn variable. Winter frosty. Wheat 35s. 9d. per quarter.
1757	4939	18	102	115	23·3	In March and May greatest number of burials. In London there was an increase of 441 in the burials. The rainfall at Lyndon was 23·68 in. The most, 6·06 in., fell in Aug., and the least, 0·38 in., fell in June. In Jan. ice in river Thames. Spring cold and backward. Summer wet. Aug. very wet. Autumn dry. Dec. mild. Wheat 47s. 5d. per quarter.
1758	4957	20	111	85	17·1	In Feb. the greatest number of burials. In London there was a decrease of 3737 in the burials. The rainfall at Lyndon was 21·59 in. The most, 5·02 in., fell in July, and the least, 0·91 in., fell in Nov. In London 5·00 in. of rain fell in July. Spring cold and dry. Summer rainy. Autumn dry and fair. In Oct. a great gale. Considerable damage done to shipping in the Downs. Wheat 39s. 6d. per quarter.
1759	4974	24	112	103	20·7	In Jan. the greatest number of burials. In London there was an increase of 2028 burials. The rainfall at Lyndon was 20·94 in. The most of it, 3·73 in., fell in Aug., and the least, 0·38 in., fell in Feb. The winter 1758-9 mildest ever known. Spring early, summer fine and warm. It is reported that in June snow fell in Surrey and Kent, in some places lay on the ground 4 in. deep. Thunderstorms general in July. On 12 Oct. violent gale. Wheat 31s. 6d. per qr.
1760	4992	33	119	126	25·2	In Feb. and April the greatest number of burials. In London there was an increase of 226 burials. The rainfall at Lyndon was 18·29 in. The most, 2·53 in., fell in Oct., and the least, 0·39 in., fell in April. From Sept. 1759 to Aug. 1760 the rainfall at Lyndon was but 14·09 in. The first five months of year very dry. It is mentioned that end of Feb., about Chatham, most of the springs dried up. There was frost in Jan. and the Thames frozen, as reported that ships in the river driven

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1761	5010	20	123	115	23·0	from their anchorage by shoals of ice. Very hot, dry summer. Dec. open and warm. Wheat 28s. 10d. per quarter. In May the greatest number of burials. In London there was an increase of 1233 burials. The rainfall at Lyndon was 21·40 in. The largest quantity, 3·69 in., fell in Oct., the least quantity, 0·19 in., fell in Jan. In middle of Jan. a very forward season. Primroses and daisies in great plenty. Thrush's nest with four eggs found at Wimbledon. This weather was followed by frost. In June weather very wet, with thunderstorms in places. Weather 25th June was excessively hot. Several horses dropped down dead. In Nov. a hurricane; ships driven from anchor in the Thames. Beginning Dec. thick fog in London. Wheat 23s. 11d. per quarter.
1762	5029	23	105	132	26·3	In May the greatest number of burials. In London there was an increase of 5263 in the burials. The rainfall at Lyndon was 17·89 in., of which the most, 4·15 in., fell in Oct., and the least, 0·23 in., in Dec. The first seven months of the year were dry. In Feb. a great fall of snow; on 21st snow accompanied with a hurricane, in which many people perished. It snowed for 18 days in Feb. Aug. was a wet month. Influenza in London in April. 24th Aug. dreadful thunderstorm and rain in London. In Oct. heavy floods about London. On 21st Dec. most intense frost set in and continued to near end of Jan. Wheat 30s. 10d. per qr. War was declared against Spain.
1763	5047	31	98	124	24·6	In June the greatest number of burials. In London 183 was the decrease in the number of burials. The rainfall at Lyndon was 28·74 in., of which the most, 5·66 in., fell in July, and the least, 0·60 in., fell in Jan. This was a cold and wet year. Jan. was a cold dry month. The river Thames was frozen at Richmond. Frost lasted till end of Jan. The mean temperature at London in Jan. was 30°·25, and for the year 47°·39. In Feb. weather mild and season forward. The summer was remarkably wet. Sept. was wet, but very mild. 2nd Oct. violent storm of wind and rain. Dec. was warm and wet; on the 1st furious storm of wind and rain. Wheat 32s. 2d. per qr.
1764	5065	33	107	131	25·9	In May the greatest number of burials. In London there was a decrease of 2941 in the burials. The rainfall at Lyndon was 23·49 in., of which the greatest quantity, 4·62 in., fell in July, and in March and Sept. there fell each month 0·83 in. of rain. The mean temperature of London this year

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
						was 48°.02. Jan. was a warm, wet month. In Jan. great inundation in the fens of Cambridgeshire. Both Feb. and March cool, dry months. On 25th Feb. great fall of snow in Lincolnshire. Gilbert White says it was a remarkable year for floods and high waters. Wheat 36s. 11d. per qr.
1765	5083	36	132	143	28·1	In Dec. the greatest number of burials. In London there was an increase of 28 in the burials. The rainfall at Lyndon was 20·00 in. The greatest amount of rain, 4·84 in., fell in Oct., and the least amount, 0·41 in., fell in May. Jan. was warm. Feb. a cold month. The mean temperature of the year at London was 47°.81. Feb. and Dec. the coldest months. In March remarkable fall of snow. May, June, and July dry months, moderately warm. On 26th Aug. fish in the Thames supposed to have been killed by excessive heat. Nov. storms on coast. Wheat 32s. 5½d. per qr.
1766	5102	26	101	176	34·5	In Oct. the greatest number of burials. In London the increase of burials was 681. The rainfall at Lyndon was 18·97 in. The most, 3·29 in., fell in May, and the least, 0·16 in., fell in Jan. The mean temperature of London this year was 48°.81, the temperature in Aug. being 62°.10. There was no very cold month. Jan. dry, a little snow. In Feb. rains and snow, and some places floods. March dry, but snow fell. May wet, June and July showery. In July floods in some places. Sept. riots in several parts of England arising from the high price of provisions. On Dec. 25th a severe frost set in. Wheat 38s. 4d. per quarter.
1767	5120	26	110	97	19·0	In April the greatest number of burials. In London there was a decrease in the burials of 1299. The rainfall at Lyndon was 21·31 in. The most rain, 3·68 in., fell in July, and the least rain fell in Dec., 0·40 in. The mean temperature in London was 47°.85. In Jan. the mean temperature was 33°.25, and in Aug. 60°.60. In Jan. was a deep snow, and on some days very cold. In Feb. severe floods with thaw and rain. Wet summer. 3rd June snow half a yard deep in Derbyshire. 4th June floods at Clapham arising from three days' heavy rain. In Oct. snow in Cheshire and Derbyshire. On 21st Dec. severe frost set in. Wheat 51s. per quarter.
1768	5139	28	101	117	22·8	In Dec. the greatest number of burials. In London there was an increase of 1027 in the burials. The rainfall at Lyndon was 30·91 in.; the largest quantity, 4·52 in., fell in June, and the least, 0·39 in., in March. The mean temperature of London

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1769	5157	33	131	108	20·9	was 49·14. In Aug. the temperature was 61°·10, and in Jan. 35°·25. In some parts of Jan. very cold and frosty. A very wet year and a bad summer. Floods more or less throughout the year. Terrible thunderstorms in London & neighbourhood in July and Aug. On 1st Sept. fell in London and neighbourhood the heaviest known rain in the memory of man. Wheat 47s. 10d. per qr.
1770	5176	23	133	120	23·2	In Jan. the largest number of burials. In London there was a decrease of 1792 in the burials. The rainfall at Lyndon was 21·48 in. The largest amount, 4·77 in., fell in June, and the least, 0·69 in., fell in March. The mean temperature of London was 48°·17, the highest temperature 61°·65 in July, the lowest temperature 37°·85 in Feb. Jan. and Feb. frosty and rainy. End of March dry and windy. End of June fine after wet month. July warm. Aug. and Sept. cool and rainy. Oct. dry and cool. Nov. medium. Dec. warm. Wheat 36s. 2d. per quarter.
1771	5194	24	144	114	22·0	In May the greatest number of burials. In London there was an increase of 587 burials. The rainfall at Lyndon was 28·57 in. The largest amount, 7·82 in., fell in Nov., and the least, 0·74 in., fell in Feb. The temperature of London was 47°·81. The highest temperature, 61°·10, occurred in Aug., and the lowest, 37°·85, in March. Jan. and Feb. were comparatively dry months. March a cold month, May dry, June wet, July and Aug. warm, Sept. a dry month, Oct. rainy. In Nov. very considerable floods all the country over did considerable damage. Wheat 38s. 9d. per qr.
1772	5213	19	129	140	26·9	In April the greatest number of burials. In London there was a decrease of 654 in the burials. The rainfall at Lyndon was 17·59 in. The largest quantity of rain, 4·07 in., fell in Oct., and the least, 0·66 in., fell in May. The mean temperature of London was 48°·43, and at Lyndon 46°·34. The warmest month in London was 62°·65 in Aug., and Jan. was the coldest month, with a temperature of 35°·75. In Jan. the river Thames at Fulham entirely frozen over. The three first months of the year very cold and dry. In Oct. rain and gales and floods. Floods in Isle of Ely in Nov. Dec. a warm month. Wheat 45s. 1d. per qr.
						In Sept. the greatest number of burials. In London there was an increase of 4273 burials. The rainfall at Lyndon was 28·65 in. The most rain, 4·52 in., fell in Sept., and the least, 0·88 in., fell in April. The temperature of London was 50°·60,

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1773	5232	25	134	144	27·5	<p>and at Lyndon 48°·05. The three months of June, July, and Aug. very warm. The highest temperature at London was 64°·26 in June, and the lowest, 36°·25, in Jan. In Feb. severe snowstorms. On 22nd March thunderstorm in London. April provisions dear. A mob took wheat from the mills at Chelmsford, and sold it at 4s. a bushel. June was wet and hot. A panic in London on bank failures. Sept. 25th hurricane in London and Northumberland. In Sept. great floods in some places. Oct., Nov., and Dec. all much warmer than the average. This classed as a wet year. Wheat was 52s. 2d. per quarter.</p> <p>In March the greatest number of burials. In London there was a decrease of 4397 in the burials. The rainfall at Lyndon was 29·38 in. The most, 6·84 in., fell in May, and the least, 0·56 in., fell in March. The mean temperature at Lyndon was 47°·53. In Aug. the temperature was 62°·2, and in Feb., the coldest month of the year, 35°·5. The year very wet, too wet for corn. In May there were floods. On 1st May violent thunderstorm in London. On 2nd June and 14th Aug. heavy thunderstorms in London. Nov. a cold month, and Dec. about average temperature. Wheat 52s. 7d. per qr.</p>
1774	5251	34	135	143	27·2	<p>In Sept. the greatest number of burials. In London there was a decrease of 772 in the burials. The rainfall at Lyndon was 35·24 in., of which 8·00 in. fell in Sept., and 1·16 in. in Oct. The mean temperature at Lyndon was 47°·30. June, July, and Aug. all above 60°·0. In this year Mr. Glaisher gives the temperature as 48°·89. June temperature 61°·0, July 62°·8, and Aug. 61°·5. Jan., the coldest month, had a temperature of 33°·1, so that the winter was cold and the summer warm. In Jan. intense frost. This was a very wet year with repeated floods; the late corn spoiled. The rain in some parts of the country nothing like so great in proportion as at Lyndon. Wheat 49s. per quarter.</p>
1775	5270	29	156	171	32·5	<p>In June the largest number of burials. It is recorded that 74 of the burials due to small-pox. In London there was a decrease of 370 in the burials. It is also known that influenza appeared in November of this year. The rainfall at Lyndon was 31·70 in.; the largest amount, 5·67 in., fell in September, and the least, 0·89 in., fell in June. The mean temperature at the Royal Society House was 51°·24, and at Lyndon 49°·53. June, July, and Aug. were warm months. There was no very</p>

Year	Popu-lation	Marri-agess	Bap-tisms	Bur-ials	Death rate per 1000	
1776	5289	25	148	106	20·0	cold month. The temperature of July both at London and Lyndon was 64°·0. Dec., at Lyndon, the coldest month, temperature was 37°·5. This was a very wet summer and autumn. Influenza appeared in Nov. Wheat 47s. 5d. per quarter
1777	5308	32	154	107	20·2	In Jan. and Dec. the largest number of burials. In London there was a decrease of 1466 in the burials. The rainfall at Lyndon was 27·84 in. There was 5·20 in. fell in Aug., and the least, 0·89 in., in April. The temperature in London was 49°·51, and at Lyndon 48°·06. July was 63°·8, and Jan. 27°·5 at Lyndon. In Jan. very cold, snow lying for 26 days on roofs of houses in London. In Feb. a gentle thaw set in. July very warm, and Aug. warm and wet. Mild and wet to end of year. Wheat 37s. 11d. per quarter.
1778	5327	25	156	141	26·5	In Oct. the greatest number of burials. In London there was an increase of 4286 in the burials. The rainfall at Lyndon was 23·60 in. The most, 4·01 in., fell in Oct., the least, 0·51 in., fell in Sept. The temperature at London was 49°·44, and at Lyndon 48°·00. July and Aug. warm months. Jan. was the coldest month, its temperature at Lyndon being 38°·5. The Thames was frozen at Kingston on 8th Jan. Rainy June and July. Dry Sept. Heavy rain in Oct.; Nov. and Dec. moderately wet. Wheat 43s. per quarter.
1779	5347	19	137	123	23·0	In Nov. the greatest number of burials. In London there was a decrease of 2045 burials. The rainfall at Lyndon was 26·27 in.; the most, 4·24 in., fell in Oct., and the least, 0·39 in., fell in Aug. The mean temperature at London was 50°·46, and at Lyndon 48°·73. July was a very hot month, the temperature at London being 68°·0, and at Lyndon 66°·0. June, July, and Aug. the temperature all above 62°·0. The temperature in Jan. at London was 36°·4, and at Lyndon 34°·5; this was the coldest month of the year. This was a very hot year. July 12th and 20th severe thunderstorms in London & neighbourhood. Heavy rain in July, Oct., and Nov. Warm in Nov. and Dec. Wheat 39s. 1d. per qr.
						In Sept. the greatest number of burials. Nine deaths from small-pox recorded. In London there was an increase of 21 burials. The rainfall at Lyndon was 19·88 in. The most, 4·04 in., fell in July, the least, 0·13 in., fell in March. The mean temperature in London was 52°·38, and at Lyndon 50°·33. In Aug. the temperature in London was 65°·2, and at Lyndon 65°·0 in Aug., and

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1780	5366	19	162	140	26·1	65°·5 in July at Lyndon and 65°·9 in London. The lowest temperature was in Jan., 36°·4, in London, and 36°·0 at Lyndon. This was a very hot summer and a hot year. A temperature of 94° in the shade was recorded in July. In places the rain was much heavier than at Lyndon. In London 26·79 in. recorded. There were floods in July, but very dry Jan. to March. In Dec. rain. Wheat 32s. 9d. per quarter.
1781	5385	24	152	107	19·9	In Sept. the greatest number of burials. In London there was an increase of 97 burials. The rainfall at Lyndon was 20·11 in. The most, 3·43 in., fell in Sept., and the least, 0·43 in., fell in Aug. The mean temperature in London was 50°·07, and at Lyndon 48°·07. June, July Aug. and Sept. were very warm, while Jan. was a cold month. Cold, dry, and backward spring. A very hot summer, 84° in May. The mean temperature of Aug. in London was 67°. Rainy autumn, cold and dry Dec. Wheat 38s. 4d. per quarter.
1782	5405	19	175	116	21·5	In Sept. the greatest number of burials. In London 192 increase in burials. The rainfall at Lyndon was 20·82 in. The most, 4·00 in., fell in Sept., the least, 0·08 in., fell in Oct. The mean temperature at Lyndon was 50°·04. Jan. was the coldest month, with a temperature of 34°. June, July, and Aug. all hot months. Some parts of Jan. very cold. In Feb. severe gales in several places. A hot, dry summer. Dec. a mild month. Wheat 46s. 7d. per qr.
1783	5424	21	155	160	29·5	In March the greatest number of burials. In London there was a decrease of 2791 burials. The rainfall at Lyndon this year was 32·09 in. The most, 6·13 in., fell in April, the least, 0·52 in., fell in Dec. It was a cold, wet year. The mean temperature at Lyndon was 46°·48. Feb. and Nov. the coldest months; weather very severe. Very heavy rains in April, May, and Sept. Dec. was a dry and cold month. Wheat 47s. 7d. per quarter.

In Aug. the largest number of burials. Dr. Ducarel's 'History of Croydon' says there were between 700 and 800 houses in the town of Croydon. In London there was an increase of 1111 burials. The rainfall at Lyndon was 22·78 in. The most, 4·22 in., fell in May, the least, 0·56 in., fell in April. The mean temperature at Lyndon was 48°·95. In July the mean temperature was 67°·7. It was a very hot summer. Dec. was a cold month, the temperature being 34°·8. Gilbert White said that it was an amazing and portentous summer,

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1784	5444	30	135	142	26·1	full of horrible phenomena, alarming meteors, tremendous thunderstorms, and a peculiar haze or smoky fog prevailed many weeks in England and every part of Europe. The sun at noon looked as black as a clouded moon, and shed a rust-coloured light; the heat was intense. In the middle of June frosts every night. Very cold end of Dec. Wheat 48s. 2d. per quarter. In Feb. the greatest number of burials. Small-pox was the cause of 27 of the burials. In London there was a decrease of 1201 burials. The rainfall at Lyndon was 27·21 in.; the most, 5·08 in., fell in July, and the least, 0·22 in., fell in Oct. In Lambeth the rainfall this year was 27·21 in. The mean temperature at Lyndon this year was 46°·03. The mean temperature of Jan. was 29°·8. The mean of July was 61°·5. It was a very cold year. Frost commenced in Jan., and lasted 89 days, and in Nov. the longest frost set in. In Jan. river Thames frozen; in Feb. deep snow. In Dec. snow set in. Wheat 47s. 9d. per quarter.
1785	5463	22	142	115	21·1	In April the largest number of burials. In London there was an increase of 91 burials. The rainfall at Lyndon was 20·21 in.; the most, 4·32 in., fell in Aug., the least, 0·18 in., fell in April. The mean temperature of the year at Lyndon was 47°·40. The beginning of this year was very cold. In the winter of 1784-85 there is said to have been 127 days of frost. The first five months of the year dry but cold. July, Aug., and Sept. wet. Dec. was a cold month. Wheat 42s. 8d. per qr.
1786	5483	21	170	110	20·1	In March the largest number of burials. In London there was an increase of 1535 burials. The rainfall at Lyndon was 27·29 in. The most, 4·76 in., fell in Oct., and the least, 0·67 in., fell in Feb. At Lambeth the rainfall this year was 22·43 in. The mean temperature for eleven months, Jan. to Nov., at Lyndon was 47°·73. In June, July, and Aug. mean temperature all above 60°. June was the warmest month, with a temperature of 62°·2. In Jan. the mean temperature was 36°·5. March the temperature was 34°·5. The year commenced with frost and snow, and on 1st May snow fell, and there was intense frost. June and July fine months. In Dec. frost. Wheat 37s. 6d. per quarter.
1787	5503	31	156	130	23·6	In July the largest number of burials. Of these burials, five were from small-pox. In London there was a decrease of 1105 burials. The rainfall in Lambeth this year

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1788	5523	23	167	148	26.8	<p>was 20.40 in., and at Lyndon 22.79 in. The most rainfall at Lambeth was 4.12 in. in July, and the least, 0.60 in. fell both in Jan. and Aug. The mean temperature of the year, according to Mr. Glaisher, was 49°.32. July and Aug. had each a temperature of 62°.4. Jan. was the coldest month, with a temperature of 38°.3. In Jan. cold, destructive storms. April mild, early season. July heavy rainfall in some places. In Oct. rainy. Season mild. Swallows seen in London in middle of Dec. Wheat 40s. 8d. per quarter.</p> <p>In Aug. the largest number of burials. In London there was an increase of 438 in the burials. The rainfall at Lambeth was 17.28 in. The most, 4.30 in., fell in Aug., the least, 0.08 in., fell in Oct. The temperature according to Glaisher this year was 49°.07. The highest mean for month 61.6 in July, and the lowest 30.4 in Dec. The rainfall at Lyndon this year was 17.18 in., and the mean temperature 49°.96. In the spring cold and freezing blasts. July and Aug. warm. In July the mean temperature at Lyndon was 65°.5. End of year cold and dry. This was a droughty year. Wheat 43s. 10d. per qr.</p>
1789	5543	28	162	139	25.1	<p>In March largest number of burials. In London there was an increase of 1052 burials. The rainfall at Lyndon was 28.00 in., the most, 4.93 in., fell in Oct., the least, 0.33 in., in Aug. The rainfall record for Lambeth is not complete for this year. The mean temperature according to Glaisher was 47°.93. According to Howard the mean temperature of London was 49°.49. Jan. was the coldest month, with a mean temperature of 35°.0, and Aug. the warmest month, with a temperature of 61°.5. The temperature at Lyndon for June, July and Aug. was greater than given by Glaisher, and the mean of the year was 48°.95. There was an intense frost in Jan., the Thames frozen, and a frost fair held. A long cold winter. This was a cold wet year. June and July wet. Thunderstorms prevalent. In Oct. great floods. Dec. was a mild month. Wheat 49s. 11d. per qr.</p> <p>In April largest number of burials. In London there was a decrease of 2711 in the burials. The rainfall at Lambeth was 22.31 in. The most, 3.70 in., fell in May, and the least, 0.20 in. fell in Feb. The mean temperature of the year at Lyndon was 50°.08, and according to Glaisher 49°.28. June, July and Aug. warm months. Jan. was the coldest month of the year.</p>
1790	5563	29	176	141	25.4	

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1791	5583	27	159	140	25·1	The spring of the year mild. 22nd June heat very great, temperature 80°, followed by thunderstorms. In Nov. storms in London. Floods some places in Dec. Wheat 49s. 11d. per qr. In Sept. largest number of burials. In London there was an increase of 722 in the burials. The rainfall at Lyndon was 24·72 in. and at Lambeth 20·46 in. There was most rain, 3·44 in., at Lambeth in Nov., and the least 0·27 in. in Sept. The mean temp. according to Glaisher was 49°·29. The temperature in July was 60°·5, and in Aug. 62°·7. The coldest, 36°·2, was in Dec. Howard gives the temperature of London this year as 50°·83. Rainy in Jan. and Feb. Summer dry and warm. A dry year on the whole. Wheat 43s. 10d. per qr.
1792	5603	28	168	157	28·0	In April the largest number of burials. Among the burials at Croydon are recorded 5 suicides. In London there was an increase of 1453 in the burials. The rainfall at Lyndon was 29·40 in. Both in the months of April and June there was 4·04 in. of rain. The least rain, 0·71 in., was in Feb. Nov. was also a dry month, the rainfall being 0·76 in. The mean temperature at Lyndon was 49°·54. According to Glaisher the mean temperature was 49°·19. Howard gives the mean temperature of London 50°·48. Jan. and Feb. cold months. Frost beginning of year. Mean temperature Jan. 36°·5. Aug. a warm month, mean temperature 63°·5. The weather warm in Nov. and Dec. Wheat 41s. 10d. per qr.
1793	5623	29	163	160	28·5	In July the largest number of burials. In London there was an increase of 1536 in the burials. The rainfall at Lyndon was 22·91 in. The most, 3·85 in., fell in Sept., and the least, 0·42 in., fell in June. The mean temperature at Lyndon this year was 49°·76 in., and the temp. of London given by Glaisher 49°·16 in. Howard gives the temperature as 50°·82. Jan. was cold, 36°·9. July very warm. At Lyndon 68°·2, and according to Glaisher 65°·9. Beginning of April snow. In July a temperature of 90° in the shade recorded. Summer warm and dry. Sept. rainy. Nov. wet. Dec. was mild and dry month. Wheat 46s. 7d. per qr.
1794	5644	30	153	151	26·8	In July the largest number of burials. In the Croydon burials one was reported to have been murdered, and seven died from small-pox. In London there was a decrease of 2508 in the burials. The rainfall at Lyndon was 26·58 in. The most, 4·20 in., fell in July and the least, 0·42 in., fell in Jan. The mean temperature at

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1795	5664	24	163	141	24·9	<p>Lyndon was $50^{\circ}75$. Glaisher's temperature for the year was $50^{\circ}13$. Howard gives the mean temperature of London as $51^{\circ}20$. June, July and Aug. were warm months. In Aug. the temperature at Lyndon was $69^{\circ}0$, and the weather appears to have been cold in Jan., as the temperature then was $34^{\circ}5$. There was a severe storm on 25th Jan., and several persons perished from the inclemency of the weather. The early part of the year to end of June was dry, the autumn was decidedly wet. Dec. was cold and dry. Wheat was 47s. 5d. per quarter.</p> <p>In Feb. the largest number of burials. In London there was an increase of 1938 in the burials. The rainfall at Lyndon this year was 21·40 in., the most, 4·54 in., fell in Oct., and the least, 0·06 in., fell in Sept. The mean temperature for the year at Lyndon was $48^{\circ}73$, and Glaisher gives the temperature as $48^{\circ}44$. The weather was excessively cold and dry in Jan. In Feb. was an inundation from melting snow, which carried away bridges. Glaisher gives the mean temperature of Jan. as $25^{\circ}5$. The warmest month was Aug. Glaisher gives the temperature as 62·1, and the temperature for the same month at Lyndon was $64^{\circ}5$. The first five months of the year very dry. June a wet month, rest of summer dry. Oct. very wet, rest of year moderate. Dec. was a warm month. There was a flow of the Bourne out of Orpington Gravel-pits this year. A famine in England. Wheat was 72s. 3d. per qr.</p>
1796	5685	27	157	117	20·6	<p>In March largest number of burials. In London there was a decrease of 1891 in the burials. The rainfall at Lyndon this year was 22·08 in., the most, 5·65 in., fell in July, the least, 0·38 in., fell in March. The mean temperature for the year was $49^{\circ}43$ at Lyndon, and by Glaisher $48^{\circ}98$. The four months, June to Sept., had at Lyndon a temp. of 60° and over each month. Jan. was a warm month. March cold and dry, May moderate, June dry and warm. July wet and warm. Autumn comparatively dry. Dec. a very cold month. Wheat sold for £6 per qr., average price 71s. 1d. per qr.</p>
1797	5705	28	198	137	24·0	<p>In Jan. greatest number of burials. In London a decrease of 2274 in the burials. The rainfall at Lyndon this year was 27·85 in. The most, 4·79 in., fell in Sept., and the least, 0·08 in., fell in Feb. The mean temp. at Lyndon was $49^{\circ}08$. Temperature given by Glaisher $48^{\circ}40$, and by Howard $49^{\circ}39$. The three first months of the year</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1798	5726	37	194	164	28·6	<p>were cold. July was hot. Its temperature at Lyndon 66°·8, by Glaisher, 64°·3, and Howard 65°·48. On 16th July a terrific thunderstorm at Croydon. A snuff-mill set on fire. June, July and Sept. wet months: floods in Sept. End of Nov. snow, Dec. mild. In this year cash payments suspended at the Bank. About 1400 French soldiers landed at St. David's, Pembrokeshire, but surrendered without fighting. Wheat 41s. 2d. per qr.</p> <p>In Aug. greatest number of burials. In London there was an increase of 1141 burials. The rainfall at Lyndon this year was 21·94 in. The most, 3·03 in., fell in Oct.; the least, 0·53 in., fell in March. The temperature at Lyndon this year was 50°·38; Glaisher's temperature 49°·81, and Howard's 51°·00. The summer was very warm. The highest temperature at Lyndon was 65°·8 in June. In July and Aug. the mean temperature of both months over 64°·0. The first six months of the year were very dry, there being at Lyndon but 7·27 in. of rain. Jan. and Feb. were cool months. A fine hot summer. In Sept. great gale; boats on Thames dashed to pieces. Oct. and Nov. wet months, Dec. cold and dry. Wheat 48s. 7d. per qr.</p>
1799	5746	32	168	132	23·0	<p>In April the greatest number of burials. In London there was a decrease of 21 burials. The rainfall of London, given by Howard, 24·60 in., the most, 3·39 in., fell in Sept.; the least, 0·61 in., fell both in March and June. The mean temperature this year according to Glaisher was 46°·89, and according to Howard 47°·92. The first three months of the year very cold. In Feb. heavy rains and snowstorms, with floods in places. Summer wet and cold. In July the temperature given by Glaisher was 60°·8, and this was the warmest month of the year. The autumn wet and cold, with floods. Very cold in Dec. The harvest not got in in some parts of Norfolk till the beginning of Nov., and in some other parts some corn lay rotting in the fields at the beginning of Dec. There was a flow of the Bourne out of Orpington Gravel-pits this year. Wheat varied in price throughout the year, average 65s. 6d. per qr.</p>
1800	5767	33	170	208	36·1	<p>In Oct. the greatest number of burials. Of these burials 39 due to small-pox and 17 were soldiers. In London an increase of 4934 in burials. The rainfall given by Howard was 24°·92 in. this year. The most rain, 5·32 in., fell in Nov., and the least, 0·38 in., fell in Feb. The year was on the</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1801	5788	17	164	126	21·8	<p>average warm according to Howard. The mean temperature was 50°·52, and according to Glaisher 49°·48. July and Aug. very warm months, according to Glaisher, July being 64°·2 and Aug. 65°·0. Sept. was also warm. On the 4th May said the temp. was 104°. In July of this year no rain was recorded. Seven weeks' excessive drought from June to Aug., after which very wet, and much corn spoiled. Wheat was very dear this year. In July varied from 130s. to 150s. per qr. Average 104s. 2d. per qr.</p> <p>In Sept. the greatest number of burials. In London there was a decrease of 3694 in the burials. The rainfall, according to Howard this year was 24·47 in. The most, 4·61 in., fell in Nov., and the least, 0·49 in., fell in April. The first half of the year was dry, 7·35 in. fell; the latter half was rainy, when 17·12 in. fell. The average temperature of the year, according to Howard, was 51°·08, and according to Glaisher, 50°·25. It was a warm year, the summer was hot. In Aug. temperature given by Glaisher was 63°·8. In this year a dearth producing distress. Wheat varied in price from 178s. per qr. in March to 60s. per qr. in Oct. The first Census taken 10th March.</p>
1802	5972	35	212	152	25·5	<p>In April the greatest number of burials. In London there was an increase of five burials. The rainfall according to Howard was 17·33 in. The most, 2·96 in., fell in July, and the least, 0·22 in., fell in Jan. The average temperature of the year, according to Howard, was 50°·20, and according to Glaisher, 48°·75. The temperature in August was given by Glaisher as 66°·1. Jan. temperature he gives as 34°·5, and it was a cold, dry month. The year was a dry year. Wheat 63s. 7d. per qr.</p>
1803	6161	41	198	154	25·0	<p>In Aug. the greatest number of burials. Eight deaths recorded from small-pox. In London there was an increase of 203 burials. The rainfall, according to Howard, was 23·05 in. The most, 4·49 in., fell in Dec.; the least, 0·62 in., fell in Oct. The temperature of the year, according to Howard, was 50°·33, and according to Glaisher, 49°·38. Both July and Aug. hot months, having a temperature of 64°·7 and 63°·0. Jan. a cool month. Temperature 35°·0. There was a sharp frost. This was a dry year. Reported that in some parts of the country springs were very low. In May a frost destroyed the apples in Worcestershire. Wheat was 54s. 10d. per qr.</p>
1804	6335	47	168	125	19·7	<p>In Aug. greatest number of burials. In London a decrease of 2544 in the burials.</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1812	8031	32	268	114	14.2	<p>0·96 in. fell in March. The temp. of London for the year was 52° 67 according to Howard, and for the country 51° 19. According to Glaisher the mean temp. was 50° 30. July the temp. 61° 0, only month according to Glaisher above 60° 0. The year was moderate both in rain and temp., but followed a period of very heavy rain at end of previous year. On 19th April ground covered with snow which melted soon, succeeded by another snow-storm nearly 2 ft. deep. There was a flow of the Bourne out of Orpington Gravel-pits this year. The corn crop deficient. Wheat 92s. 5d. per quarter.</p> <p>In Dec. the greatest number of burials. In London there was a decrease of 1282 in the burials. The rainfall for the year according to Howard was 27·24 in. The most 4·0 in. fell in Oct., the least 0·53 in. fell in Sept. The temp. of London for the year was 49° 21, and for the country 47° 74. According to Glaisher the mean temp. was 47° 67. The warmest month of the year was July, the temp. was 58° 4. Both Jan. and Dec. cold months. Floods in Lea Valley in Feb. Backward spring. Summer very cold and rainy. Dec. dry cold month. There was a flow of the Bourne out of Orpington Gravel-pits this year. Wheat varied in price from 15s. per qr. to 95s. per qr. The price fell in Sept. to 60s. per qr., in consequence of more favourable harvest weather.</p>
1813	8161	34	262	154	18·9	<p>In Dec. the greatest number of burials. In London there was a decrease of 973 in the burials. The rainfall for the year according to Howard was 23·56 in., of which the most 4·82 in. fell in Oct., and the least 0·68 in. in March. The temp. of London according to Howard was 49° 74, and of the country 49° 76. The temp. according to Glaisher was 48° 41. It was a cold year, not so wet as the preceding year. July had the highest temp. 59° 9. Jan. the temp. was 36° 0. The last week of Dec. of this year was foggy, and great frost began. Wheat 106s. 6d. per qr.</p> <p>In Jan. and Sept. the greatest number of burials. In London this year there was an increase of 2461 burials. The rainfall for the year according to Howard was 26·07 in. The most 3·71 in. fell in Jan., and the least 0·36 in. fell in Feb. The mean temp. in London according to Howard was 48° 24, and in the country 47° 05. The mean temp. according to Glaisher was 47° 03. The year was cold</p>
1814	8293	47	251	135	16·3	

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1815	8427	60	308	160	19.0	<p>and wet. July was a warm month, had a temp. of $62^{\circ}1$. In Jan., Feb. and March very cold, and a long frost of thirteen weeks. The Thames frozen over, and a frost fair held. In Dec. some heavy rain with high winds. Wheat 56s. 11d. per qr.</p> <p>In Oct. the greatest number of burials. In London there was a decrease of 223 in the burials. The rainfall for the year at Greenwich was 20.52 in. The most 2.47 in. fell in April, and the least 0.78 in. in Jan. The mean temp. of London according to Howard was $51^{\circ}55$, and of the country $49^{\circ}63$. The mean temp. according to Glaisher was $50^{\circ}16$. In Sept. the temp. was $63^{\circ}4$ and in Jan. $33^{\circ}5$. This was a dry year, and the summer was warm. Ponds dry and no grass in Sept. In Dec. frost. Canal, St. James' Park, frozen on 10th, and several accidents from breaking of the ice. On the 2nd May a dreadful storm at Addington, Surrey, due to a waterspout. Wheat 53s. 11d. per qr.</p>
1816	8563	45	288	165	19.3	<p>In April the greatest number of burials. In London an increase of 756 in the burials. The rainfall at Greenwich was 27.40 in. The most 3.91 in. fell in July, the least 1.47 in. fell in Feb. The mean temp. for the year at Greenwich was $46^{\circ}42$. It was a cold wet year following a dry year. The greatest monthly temp. was $58^{\circ}9$ in Sept., and the least monthly temp. $36^{\circ}6$ in Feb. Snow lay on the ground at Titsey Place, Surrey, from 12th to 15th April. The corn harvest was deficient. Wheat 73s. 7d. per qr.</p>
1817	8702	29	301	151	17.4	<p>In March, Sept. and Dec. the burials equal and greatest in number. In London there was a decrease of 348 in the burials. The rainfall at Greenwich was 26.58 in. The largest amount 4.12 in. fell in May, and the least amount 0.06 in. fell in April. The mean temp. of the year according to Glaisher was $48^{\circ}88$. June was the warmest month with a temp. of $60^{\circ}0$, and Dec. was the coldest month with a temp. of $38^{\circ}5$. It was a cold wet year. Cold and wet in harvest. Cleared up in Sept. There was a flow of the Bourne out of Orpington Gravel-pits this year. Said to have been one of the worst harvests ever known. Wheat was 148s. per qr.</p>
1818	8843	41	290	203	23.0	<p>In Aug. the greatest number of burials. In London there was a decrease of 263 in the burials. The rainfall at Greenwich was 23.45 in. The largest amount 3.78 in. fell in Sept., and the least amount 0.07 in. fell in Aug. The temp. at Greenwich for the year was $50^{\circ}77$. The highest monthly</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1819	8986	68	276	179	19.9	<p>temp. occurred in July, $66^{\circ}2$, and the lowest temp. $35^{\circ}8$ in Feb. It was a warm and dry year. Howard says there was but 1.41 in. of rain from 13th May to the 5th Sept., nearly four months. Sept. was a wet month. Oct. a mild month. Nov. was a mild month. Temp. never below 40°. Dec. dry generally, frost at end. Croydon Bourne reported by C. W. Johnson, F.R.S., to have flowed this year, but the author doubts it, having regard to the small corrected rainfall at Greenwich which is 10 in. less than that given by Mr. Johnson. Wheat 86s. 3d. per qr.</p> <p>In Jan. the greatest number of burials. In London there was a decrease of 477 in the burials. The rainfall at Greenwich this year was 28.24 in. The mean temp. of the year according to Glaisher was $50^{\circ}10$. The most rainfall in Dec. 3.48 in. The least 0.36 in. fell in Aug. Aug. was a warm month with a temp. of $65^{\circ}1$. July was also warm. The coldest month was Dec. with a temp. of $38^{\circ}4$. It was a wet but warm year. Drought in Aug. and winterly in Dec. June a great flood in the Fens, 5000 acres under water. Wheat 71s. 4d. per qr.</p>
1820	9131	69	275	181	19.8	<p>In March the greatest number of burials. In London there was an increase of 120 in the burials. The rainfall at Greenwich this year was 25.27 in. The largest amount 4.38 in. fell in July, and the least amount 0.60 in. fell in Feb. The mean temp. of the year according to Glaisher was $48^{\circ}55$. The warmest month was July with a temp. of $60^{\circ}5$, and the coldest Jan. with a temp. of $33^{\circ}3$. In Jan. severe frost and snow. Late spring. June showery, July wet. At Christmas it was singularly dry, roads dusty. Classed as a cool and dry year. Very productive. Wheat 65s. 7d. per qr.</p> <p>In March the greatest number of burials. In London there was a decrease of 120 in the burials. The rainfall at Greenwich this year was 25.27 in. The largest amount 4.38 in. fell in July, and the least amount 0.60 in. fell in Feb. The mean temp. of the year according to Glaisher was $48^{\circ}55$. The warmest month was July with a temp. of $60^{\circ}5$, and the coldest Jan. with a temp. of $33^{\circ}3$. In Jan. severe frost and snow. Late spring. June showery, July wet. At Christmas it was singularly dry, roads dusty. Classed as a cool and dry year. Very productive. Wheat 65s. 7d. per qr.</p>
1821	9279	76	292	151	16.3	<p>In March the greatest number of burials. In London there was a decrease of 897 in the burials. The rainfall at Greenwich in this year was 31.53 in.; the most rain 4.72 in. fell in Dec., and the least 0.04 in. fell in Feb. The mean temp. of the year according to Glaisher was $50^{\circ}50$. Aug. the warmest month with a temp. of $63^{\circ}0$. Feb. the coldest month with a temp. of $37^{\circ}4$. Feb. was dry and frosty. March stormy. April had hot days. May and June cold. Very little warm weather before Aug. Nov. and Dec. wet months. In Dec. mild weather but great floods. Croydon Bourne reported to have flowed this year. This was a very wet year but warm. Wheat 54s. 5d. per quarter.</p>

Year	Popula-tion	Marri-agess	Bap-tisms	Bur-ials	Death rate per 1000	
1822	9558	76	319	171	17·9	In Dec. the greatest number of burials. In London there was an increase of 414 in the burials. The rainfall at Greenwich in this year was 24·95 in. The most 4·07 in. fell in July, and the least 0·55 in. fell in Jan. The mean temp. of the year according to Glaisher was 52°·21. Both in June and July the temp. was 63°·5. Aug. was also a warm month. The coldest month was Dec. with a temp. of 37°·8. This was a warm year with average rainfall. Great heat in middle of May. June very dry; mild and wet from 16 Oct. to the end of Nov. Dec. mostly frosty. A period of agricultural distress. Wheat 44s. 7d. per qr.
1823	9845	56	212	232	23·6	In May the greatest number of burials; 109 of the Croydon burials this year are said to have been infants. In London there was an increase of 1722 in the burials. The rainfall at Greenwich this year was 24·38 in.; the most 3·96 in. fell in Oct., and the least 0·74 in. fell in May. The mean temp. of the year according to Glaisher was 48°·49. It was very cold in Jan., the mean temp. being 33°·4. The temp. in July and Aug. was respectively 60°·1 and 61°·1. The year was a cool year with moderate rainfall. This spring remarkably unwholesome. Winter was cold, March was snowy; end of year mild. Wheat 52s. 1d. per quarter.
1824	10141	59	350	194	19·1	In May the greatest number of burials. In London there was a decrease of 350 in the burials. The rainfall at Greenwich this year was 32·98 in. The most 3·95 in. fell in Aug. In six months in this year over 3·5 in. fell per month. The least rain 0·94 in. fell in Jan. The mean temp. of this year according to Glaisher was 49°·50. July was a warm month with a temp. of 63°·5. Feb. was a cold month with a temp. of 37°·6. This was a very wet year with floods at various times. Dec. excessively wet and mild. The Croydon Bourne reported to have flowed this year. Wheat 61s. 8d. per qr.
1825	10446	73	266	216	20·7	In April the greatest number of burials. In London there was an increase of 781 burials. The rainfall at Greenwich this year was 22·25 in. The most 2·97 in. fell in May, and the least 0·10 in. fell in July. The mean temp. of this year according to Glaisher was 50°·86. In July it was very hot, the average temp. being 66°·2. Aug. and Sept. both warm months. The coldest month was Feb. with a temp. of 39°·5. March was a cold month. This was a moderately dry year, following very high

Year	Popula-tion	Marri-agess	Bap-tisms	Bur-ials	Death rate per 1000	
1826	10761	76	312	213	19·8	water at end of last year. There was a flow of the Bourne out of Orpington Gravel-pits this year. Commercial crisis from excessive speculation. Wheat 66s. 6d. per qr. In April the greatest number of burials. In London there was a decrease of 268 in the burials. The rainfall at Greenwich this year was 20·71 in. The most 3·07 in. fell in Sept., and the least 0·30 in. fell in Jan. The mean temp. of the year according to Glaisher was 51°·11. The summer of this year was very warm, the temp. of July being 66°·6. The temp. of Jan., the coldest month, was 33°·6. In some parts of the country prayers offered for rain. Jan. was frosty. At times cold severe. Feb. mild. March mostly fine. April dry, latter part cool with frosty mornings, and snow and sleet at intervals. May rainy. June very dry and hot. July and Aug. hot. Sept. alternately wet and dry. Oct. showery, Nov. variable, Dec. mild. Wheat 58s. 8d. per quarter.
1827	11084	87	319	211	19·0	In Dec. the greatest number of burials. In London there was an increase in the burials of 1534. This increase was due in part to two years' burials being included in the return of two of the London parishes. The rainfall for the year at Greenwich was 22·38 in. The most 3·87 in. fell in Oct., and the least 0·59 in. fell in June. The mean temp. of the year according to Glaisher was 49°·72. July was the warmest month with a temp. of 64°·5, and Feb. was the coldest month with a temp. of 33°·0. Jan. and Feb. were dry cold months. March changeable. In April mild at beginning, near end frosty; and snow fell in some parts. May rainy, but June very dry. July and Aug. dry and warm, Sept. and Oct. wet months, Nov. a dry month. Dec. a wet and warm month, with slight frost at end. Wheat 58s. 6d. per quarter.
1828	11418	69	334	186	16·3	In Jan. the greatest number of burials. In London there was a decrease of 583 in the burials. The rainfall at Greenwich this year was 28·44 in. The most 6·43 in. fell in July, and the least 0·85 in. in Nov. The mean temp. of the year according to Glaisher was 51°·33. It was a warm and very wet year. Jan. was a wet month. March was dry. June, July and Aug. all had a temp. above 60°. Jan. was the coldest month with a temp. of 41°·4. Uncommon floods. There was a flow of the Bourne out of Orpington Gravel-pits this year. Wheat sprouted from the wet as very wet summer. Wheat 60s. 5d. per qr.

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1829	11761	52	320	187	15·9	In March the greatest number of burials. In London there was an increase of 1815 in the burials. The rainfall at Greenwich this year was 23·04 in. The most 4·38 in. fell in April, and the least 0·45 in. fell in May. The mean temp. of the year was 47°·80, according to Glaisher. In July the temp. was 61°·1, this being the warmest month. Jan. was the coldest month, the temp. being 33°·3. This was a cold year; very wet summer. Great floods. The Croydon Bourne reported to have flowed this year. Bad harvest weather, much corn injured. Wheat 75s. 2d. per qr.
1830	12115	77	340	188	15·5	Feb., Oct., and Dec. had each same number of burials, and all equally high. The decrease in burials this year in London was 1879. The rainfall at Greenwich this year was 24·22 in. The most, 3·55 in., fell in Aug., and the least, 0·28 in., in March. The mean temperature of the year, according to Glaisher, was 49°·04. July was a hot month, with a temperature of 64°·0. Jan. was the coldest month, with a temp. of 32°·3. Year commenced cold, with exception of July, a cold year. A very miserable year. Summer floods. Wheat 64s. 3d. per qr.
1831	12479	87	369	239	19·2	In July the greatest number of burials. In London there was an increase of 3692 in the burials. The rainfall at Greenwich was 26·47 in. The most, 4·97 in., fell in Oct., and the least, 0·90 in., fell in Jan. The mean temperature of the year, according to Glaisher, was 51°·64. The temperature in July was 65°·3, which was the warmest month. The coldest month was Jan., with a temperature of 36°·0. This was a moderately wet and warm year, with many thunderstorms. Wheat was 66s. 4d. per qr. Cholera appeared this year on the 26th Oct., at Sunderland.
1832	12851	70	334	233	18·1	In April the greatest number of burials. In London there was an increase of 3269 in the burials. The rainfall at Greenwich this year was 18·26 in. The most, 5·44 in., fell in Aug., and the least, 0·40 in., fell in April. The mean temperature of the year, according to Glaisher, was 50°·28. June, July, and Aug. were warm, Aug. having a temperature of 62°·3. Feb. was the coldest month, its temperature being 38°·3. The rainfall at Cobham in this year was but 19·19 in., so that considerable difference in falls. The year was warm and dry. Cholera made its appearance in London in Feb. Wheat 58s. 8d. per qr.
1833	13233	73	330	264	20·0	In May the greatest number of burials. In London there was a decrease of 2029 in

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1834	13627	82	329	265	19·4	<p>the burials. The rainfall for the year at Greenwich was 23·84 in., of which 4·85 in. the most, fell in Dec., and the least, 0·25 in., fell in May. The mean temperature of the year was 50°·17 according to Glaisher. May, June, and July were warm months; July the warmest, having a mean temperature of 62°·1. The coldest month was Jan., with a temperature of 36°·1. March was a cold month. The temperature of the year was above the average, while the rainfall was below the average. Wheat was 52s. 11d. per qr.</p> <p>In Jan. the greatest number of burials. In London there was a decrease of 4898 in the burials. The rainfall at Greenwich this year was 20·08 in., of which the most, 5·32 in., fell in July, and the least, 0·44 in., fell in Feb. The mean temperature of the year was 51°·79 according to Glaisher. The months of June, July, and Aug. very warm; the temperature of July, the warmest month, being 65°·1. There was no very cold month in this year, Dec. being the coldest, with a temperature of 42°·4. The year as a whole was warm and dry. It was mild and wet in Jan. and very wet in July and Aug. Wheat 46s. 2d. per qr.</p>
1835	14033	70	334	227	16·2	<p>Feb., March, and Nov. had each same and highest number of burials. In London there was a decrease of 264 in the burials. The rainfall at Greenwich this year was 25·45 in., of which the most per month, 4·20 in., fell in October, and the least monthly fall was 0·28 in. in July. The mean temperature for the year was 50°·40 according to Glaisher. It was a hot, dry summer, early and abundant harvest. Said that no rain fell from 14th July to the 24th Aug. The temperature in July was 65°·4. Dec. was the coldest month, with a temperature of 36°·3, and was fine and dry, with seasonable frosts. The rainfall of the year was slightly above the average. The percolating gauge at Nash Mills passed between June and end of year 7·86 in. out of a rainfall of 27·59 in. Wheat 39s. 4d. per quarter.</p>
1836	14450	51	373	230	15·9	<p>In Sept. the greatest number of burials. In London there was a decrease of 3186 in the burials. The rainfall at Greenwich this year was 27·84 in., of which the most, 4·17 in., fell in Oct., and the least, 1·12 in., fell in June. At Nash Mills the percolating gauge was passing water every month in the year, and 17·75 in. was passed out of a rainfall of 31·0 in. The mean temperature of the year was 49°·27. July was</p>

Year	Popu- lation	Marri- ages	Bap- tisms	Bur- ials	Death rate per 1000	
1837	14881	73	394	384	25·8	warm, with a temperature of $63^{\circ}9$. The coldest month of the year was Feb., with a temperature of $38^{\circ}3$. This was a cool and wet year. The Croydon Bourne reported to have flowed this year. Wheat increased in price from 36s. 5d. to 58s. 2d. per qr.; average 48s. 6d. per. qr. In this year the Act for the Registration of Births, Deaths and Marriages passed. In Jan. the greatest number of burials. In London there was an increase of 2733 in the burials. In six months, July to Dec., the deaths registered in Croydon were 208, against 165 burials in the same period. The rainfall at Greenwich this year was 21·72 in., the most, 4·52 in., fell in Aug., and the least, 0·55 in., fell in March. Percolation went on every month except from April to July inclusive, and 6·95 in. of rain percolated out of a rainfall of 21·10 in. The mean temperature of the year was $48^{\circ}52$ according to Glaisher. July and Aug. were warm, July $62^{\circ}3$ temperature. The coldest month was March, with a temperature of $36^{\circ}9$. This was a dry and cold year. Frost in March and May cold. The Croydon Bourne was flowing at Birchwood House in the spring of this year. Wheat 55s. 10d. per. quarter.
1838	15324	61		Bir- ths	Dea- ths	In Sept. the greatest number of deaths. In London there was a decrease of 2558 in the burials; the death-rate, however, was 29·6 per 1000. The zymotic death-rate in Croydon was 7·05, the fever death-rate 1·11, and the diarrhoea death-rate 0·33 per 1000. The mean temperature this year was, according to Glaisher, $47^{\circ}61$, July and Aug., the warmest months, being $61^{\circ}5$ and $60^{\circ}9$ respectively. The coldest month was Jan., with a mean temperature of $30^{\circ}5$. Percolation at Nash Mills was active for eight months in year, and 8·57 in. percolated out of a rainfall of 23·13 in. Winter 1837-38 very injurious to vegetation. The rainfall at Greenwich was 24·59 in. The most, 5·07 in., fell in June, and the least, 0·58 in., fell in April. A dry, cold year. Wheat 64s. 7d. per quarter.
1839	15780	79	411	389	24·7	In April the greatest number of deaths. In London there was a decrease of 1657 in the burials. The death-rate of London was 25·1 per 1000. The zymotic death-rate of Croydon was 4·37, the fever death-rate 1·14, and the diarrhoea death-rate 0·38 per 1000. The rainfall at Greenwich was 30·78 in. The most, 4·85 in., fell in Sept., and the least, 1·49 in., fell in Jan. Percolation at Nash Mills going on every month of the

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1840	16249	108	418	404	24·9	<p>year; 14·91 in. percolated out of 31·28 in. of rain. The mean temperature of the year was 48°·94 according to Glaisher. It was warmest in July, when temperature 61°·2, and coldest in Jan., when temperature 38°·8. It was a wet year. Harvest much damaged. Wheat 70s. 8d. per qr.</p> <p>In May greatest number of deaths. In London there was a decrease of 2480 in the burials. The death-rate in London was 25·0 per 1000, and the birth-rate 30·3 per 1000. The zymotic death-rate of Croydon was 4·37, the fever death-rate 0·92, and the diarrhoea death-rate 0·55 per 1000. The rainfall at Greenwich in the year was 18·67 in. The most, 3·06 in., fell in Nov., and the least, 0·10 in., fell in April. The mean temperature, according to Glaisher, was 48°·55. The warmest month was Aug., which had a temperature of 63°·4. The coldest month was Dec., the temperature of which was 34°·7. There were only three months in this year when percolation took place at Nash Mills, and 6·62 in. percolated out of 21·44 in. of rain. A severe winter set in on 25th Nov. Said to have been a moderate flow of the Croydon Bourne this year. Wheat 66s. 4d. per quarter.</p>
1841	16733	116	449	386	23·1	<p>In Feb. and March the greatest number of deaths. The zymotic death-rate of Croydon was 3·58, the fever death-rate 0·84, and the diarrhoea death-rate 0·30 per 1000. The death-rate in London was 24·0, the birth-rate 30·7 per 1000. The rainfall at Greenwich this year was 33·26 in. The most rain, 5·95 in., fell in Oct., and the least, 1·32 in., fell in Feb. There was a flow of the Bourne out of Orpington Gravel-pits this year, and also a flow of the Croydon Bourne. Percolation at Nash Mills took place in four months of this year, and 14·19 in. percolated out of 32·10 in. The mean temperature of the year, according to Glaisher, was 49°·93. It was coldest in Jan., when temperature 36°·1, and warmest in Aug., when temperature was 61°·3. At Greenwich the temperature for the year given as 48°·6. Severe winter to 11th Feb., then warm and early spring. This was a wet and by no means a warm year. Wheat 64s. 4d. per quarter.</p>
1842	17080	145	466	406	23·8	<p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon was 4·39, the fever death-rate 0·64, and the diarrhoea death-rate 1·35 per 1000. The death-rate in London was 23·5, and the birth-rate 31·7 per 1000. The rainfall this year was 22·57 in.; the most, 4·25 in., fell</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1843	17435	110	518	417	23.9	<p>in Nov., and the least, 0.43 in. fell in April. The temperature of the year, according to Glaisher, was 50°.74, but at Greenwich 49°.60. In June, July and Aug. the mean temperature each month was above 60°. In Aug. at Greenwich it was 65°.4. Jan. was a cold month, with a temperature of 32°.9. Dry spring and wet autumn. For seven months percolation went on at Nash Mills, and 11.76 in. percolated out of a rainfall of 26.43 in. Five inches percolated in Nov. Stated that the Croydon Bourne flowed, 1841-42. Wheat 57s. 3d. per quarter.</p> <p>In May the greatest number of deaths. The zymotic death-rate of Croydon was 5.22, the fever death-rate 1.20, and the diarrhoeal death-rate 1.38 per 1000. In London the death-rate was 24.7 and the birth-rate 31.6 per 1000. The rainfall at Greenwich this year was 24.47 in. The most, 4.25 in., fell in Oct., and the least, 0.40 in., fell in Dec. The rainfall at Croydon this year is given at 27.43 in. The temperature at Greenwich this year was 49°.4. The warmest month was Aug., with a temperature of 62°.1, and the coldest month was Feb. with a temperature of 36°.0. Percolation at Nash Mills went on in seven months, and 8.10 in. percolated out of 26.47 in. Percolation went on in May and June, after stopping in March and April. Wheat 50s. 1d. per quarter.</p>
1844	17797	109	476	351	19.7	<p>In Dec. the greatest number of deaths. The zymotic death-rate of Croydon was 3.09, the fever death-rate 1.52, and the diarrhoeal death-rate 0.22 per 1000. The death-rate of London was 25.0, and the birth-rate 32.2 per 1000. The rainfall at Greenwich this year was 23.20 in.; the most, 4.50 in., fell in Nov., and the least, 0.30 in. fell in May. The rainfall at Croydon this year is given as 21.75 in. The mean temperature at Greenwich for this year was 48°.6. The warmest month was July, with a temperature of 61°.4, and the coldest month Dec., with a temperature of 33°.0. Percolation at Nash Mills went on for five months in the year, and 9.65 in. percolated out of a rainfall of 23.57 in. For six months, April to Sept., there was no percolation. High water in Godstone Quarries on 2nd May. Wheat 51s. 3d. per quarter.</p>
1845	18166	155	476	367	20.2	<p>In March the greatest number of deaths. The zymotic death-rate of Croydon was 3.63, the fever death-rate 1.10, and the diarrhoeal death-rate 0.33 per 1000. The</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1846	18543	146	524	389	21·0	<p>death-rate of London was 23·2, and the birth-rate 32·5 per 1000. The rainfall at Greenwich this year was 22·34 in., of which 3·10 in. fell in Aug., and 0·55 in. fell in April. The rainfall at Croydon this year is given as 22·58 in. The mean temperature at Greenwich this year was 47°·6. The warmest month was June, which had a temperature of 60°·7. The coldest month was Feb., which had a temperature of 32°·7. March was a very cold month. Percolation at Nash Mills went on for only three months this year, and 5·50 in. percolated out of a rainfall of 24·43 in. The nine months, Feb. to Oct., no percolation. High water in Godstone Quarries occurred on the 15th April. Potato crop failed this year. Wheat 50s. 10d. per quarter.</p>
1847	18927	129	538	492	26·0	<p>In Dec. the greatest number of deaths. The zymotic death-rate, Croydon, 3·45, the fever death-rate, 0·86, and the diarrhoea death-rate 1·19 per 1000. The death-rate in London was 23·30, and the birth-rate 33·1 per 1000. The rainfall at Greenwich was 25·29 in. The most, 5·13 in., fell in Oct. and the least, 0·50 in., fell in June. The rainfall at Croydon is given this year as 25·20 in. The mean temperature at Greenwich this year is given as 51°·3. For four months, June to Sept., it was very warm, the maximum temperature being 65°·2 in June. In Dec. the temperature 32°·9. Percolation at Nash Mills went on six months, and 10·27 in. percolated out of 26·55 in. of rainfall. High water in Godstone Quarries 18th March. Floods in April. A very warm summer. Wheat 54s. 8d. per quarter.</p> <p>In Dec. the greatest number of deaths. The zymotic death-rate in Croydon was 5·81, the fever rate 1·64, and the diarrhoea death-rate 1·00 per 1000. The death-rate in London was 27·0, and the birth-rate 31·7 per 1000. The rainfall at Greenwich was 17·61 in., of which the most, 2·0 in., fell in each of the last three months of the year. The least rainfall, 0·67 in., fell in July. At Croydon the rainfall for the year was given as 18·52 in. In Mr. Ranger's report on Croydon the rainfall for this year given as 15·65 in. The mean temperature at Greenwich was 49°·72. The warmest month was July, with a temperature of 65°·4. The coldest month was Feb., with a temperature of 35°·5. Percolation at Nash Mills occurred only in Feb. and Dec., and 4·14 in. percolated out of a</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1848	19320	131	515	542	28·1	<p>rainfall of 23·20 in. It was high water in Godstone Quarries on 19th March. This was decidedly a dry year. Dry, frosty and cold to end of March, with considerable heat in July and Aug. Wheat 69s. 9d. per quarter.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon was 8·80, the fever death-rate 2·1, and the diarrhoea death-rate 1·40 per 1000. The death-rate in London was 25·8, and the birth-rate 32·5 per 1000. Cholera invaded London in October this year. The rainfall at Greenwich this year was 30·10 in. The most, 4·25 in., fell in Aug., and the least, 0·40 in., fell in May. The rainfall at Croydon is given as 30·36 in. The mean temperature at Greenwich this year is given as 50°·41. July the warmest month, with a temperature of 62°·3, and Jan. the coldest month, with a temperature of 34°·6. The mean temperature of Croydon is given as 49°·91 for this year. Percolation at Nash Mills going on for seven months this year, and 12·99 in. percolated out of a rainfall of 29·69 in. The year was a wet, warm year following a period of low water. Wheat 50s. 6d. per quarter.</p>
1849	19721	157	582	517	26·2	<p>In Sept. the greatest number of deaths. The zymotic death-rate of Croydon was 9·18, the fever death-rate 2·23, and the diarrhoea death-rate 4·36 per 1000. There were 53 deaths from cholera in Croydon this year, and 86 deaths from cholera and diarrhoea. The Public Health Act adopted in Croydon on 1st Aug. this year. The death-rate in London this year was 30·14, and the birth-rate 32·4 per 1000. The rainfall at Greenwich this year was 23·58 in. The most 3·70 in. fell in May, and the least 0·45 in. fell in Aug. The rainfall at Croydon stated to have been 22·25 in., and the mean temp. 48°·38. The temp. at Greenwich this year was 50°·32. Aug. was the warmest month with a temp. of 63°·1, and Dec. was the coldest month with a temp. of 38°·3. Percolation at Nash Mills went on over three months, and 1·52 in. percolated out of a rainfall of 24·65 in. High water at Godstone Quarries occurred on 19th March. This was a very drying year. Wheat 44s. 3d. per quarter.</p>
1850	20130	151	562	392	19·5	<p>In May the greatest number of deaths. The zymotic death-rate of Croydon was 5·11, the fever death-rate 1·44, and the diarrhoea death-rate 0·75 per 1000. The death-rate in London this year was 21·0, and the birth-rate 32·0 per 1000. The rain-</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1851	20548	186	613	381	18.5	<p>fall at Greenwich this year was 19.53 in., of which the most 2.82 in. fell in July, and the least 0.40 in. fell in March. The rainfall at Croydon is given as 19.47 in., and the mean temp. 47°.92. The temp. at Greenwich this year was 49°.52. The three months June to Aug. were warm, July the warmest had a temp. of 62°.2. The coldest month of the year was Jan., which had a temp. of 34°.1. Percolation at Nash Mills went on only in Feb. and Dec., and 1.80 in. percolated out of 20.50 in. of rainfall. High water at Godstone Quarries did not take place until June 7th. This was a dry and cool year. The waterworks of Croydon were commenced in this year. Wheat 40s. 3d. per quarter.</p> <p>In July and Nov. the highest and same number of deaths. The zymotic death-rate of Croydon was 2.53, the fever death-rate 0.49 and the diarrhoea death-rate 1.22 per 1000. The death-rate of London this year was 23.4, and the birth-rate 32.6 per 1000. The rainfall at Greenwich this year was 23.53 in. The most 4.20 in. fell in July, and the least 0.50 in. fell in Sept. The rainfall at Croydon this year was 17.38, and the mean temp. 49°.84. The mean temp. at Greenwich this year was 49°.38. Aug. was the warmest month with a temp. of 62°.6, and Nov. was the coldest month with a temp. of 37°.7. Percolation at Nash Mills went on for the first four months of the year only, and 7.14 in. percolated out of a rainfall of 22.18 in. High water at Godstone Quarries May 12th. This was a dry year for the most part; end of the year springs very low. Wheat 39s. 11d. per qr. Croydon Sewerage and Waterworks came into operation this year.</p>
1852	21387	206	641	483	22.6	<p>In Dec. the greatest number of deaths. The zymotic death-rate in Croydon was 5.94, the fever death-rate 1.78 and the diarrhoea death-rate 1.54 per 1000. The death-rate in London was 22.6, and the birth-rate 33.6 per 1000. The rainfall at Greenwich this year was 34.01 in. The most 6.00 in. fell in Nov., and the least 0.17 in. fell in March. The rainfall at Croydon is given as 34.19 in., and the mean temp. 50°.17. The mean temp. at Greenwich this year was 50°.63. July very warm month with a temp. of 66°.0. The coldest month of the year was March with a temp. of 40°.6. Percolation at Nash Mills went on for six months in the year, and 14.63 in. percolated out of a rainfall of 41.14 in. High water Godstone</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1853	22261	250	719	600	27·0	<p>Quarries occurred on 26th Nov. The beginning of year springs very low. Mills on the Wandle not able to work full time. End of year a Bourne flow at Croydon. Epidemic fever commenced beginning of year, and continued more or less all the year. Wheat 40s. 9d. per quarter.</p> <p>In March the greatest number of deaths. The zymotic death-rate of Croydon was 8·27, the fever death-rate was 3·41 and the diarrhoea death-rate 1·84 per 1000. In London the death-rate was 24·4, and the birth-rate 33·3. The rainfall at Greenwich this year was 29·99 in.; the most 5·48 in. fell in July, the least 0·80 in. fell in Dec. The rainfall at Croydon is given as 30·60 in., and the mean temp. of the year 48°·49. The mean temp. at Greenwich this year, 47°·54. July and Aug. warm; July mean temp. 61°·1. Feb. was the coldest month with a temp. of 33°·2. At Nash Mills there was no percolation for seven consecutive months, Feb. to Aug.; the total amount of percolation being 4·33 in., out of 28·46 in. of rainfall. High water Godstone Quarries, Jan. 31st. The Croydon Bourne flowing at the commencement of this year. Enteric fever very bad in Croydon; 32 deaths took place in Jan., and 81 in the course of the year. Cholera reported to be in the county, but none in Croydon. Wheat 53s. 3d. per quarter.</p>
1854	23170	225	706	622	26·9	<p>In Oct. the greatest number of deaths. The zymotic death-rate in Croydon was 8·76, the fever death-rate 1·68 and the diarrhoea death-rate 3·93 per 1000. Cholera in Croydon caused 49 deaths, and the deaths from cholera and diarrhoea in the year were 97. In London the death-rate was 29·4, and the birth-rate 33·7 per 1000. The rainfall at Greenwich this year was 19·01 in., of which the most 3·51 in. fell in May, and the least 0·32 in. fell in March. The rainfall at Croydon was 16·26 in., and the mean temp. 51°·30 this year. The mean temp. at Greenwich this year was 49°·23. The warmest month was July with a temp. of 61°·0, and the coldest month Jan. with a temp. of 39°·3. At Nash Mills percolation took place only in Jan. and Feb., and 1·40 in. percolated out of a rainfall of 18·27 in. It was high water in Godstone Quarries on Feb. 10th. It was a dry year, and springs very low end of year. Wheat 72s. 5d. per quarter.</p>
1855	24116	232	790	509	21·1	<p>In Jan. the greatest number of deaths. The zymotic death-rate in Croydon this year was 3·19, the fever death-rate 1·24,</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1856	25101	226	740	466	18·6	<p>and the diarrhoea death-rate 0·71 per 1000. In London the death-rate this year was 24·3 per 1000, and the birth-rate 33·3. The rainfall at Greenwich this year was 23·59 in. The most 5·25 in. fell in July, and the least 0·09 in. fell in April. The rainfall this year at Croydon was 23·83 in., and the mean temp. 48°·24. The temp. at Greenwich this year was 47°·17. July and Aug. hot months. In July temp. 62°·6. The coldest month was Feb., which had a temp. of 29°·2. Frost began middle of Jan., and lasted for six weeks. Very cold nights in May, that killed the shorn sheep and swallows. Percolation at Nash Mills went on for nine months, and 7·54 in. percolated out of 25·89 in. of rainfall. High water at Godstone Quarries 6th March. It was a dry cold year. Wheat 74s. 8d. per quarter.</p> <p>In April the greatest number of deaths. The zymotic death-rate in Croydon this year was 3·35, the fever death-rate 0·56 and the diarrhoea death-rate 0·48 per 1000. In London the death-rate was 22·1 and the birth-rate 33·4 per 1000. The rainfall at Greenwich this year was 23·27 in.; the most 3·45 in. fell in May, and the least 0·90 in. fell in July. The rainfall at Croydon was 23·95, and the mean temp. 48°·12. The mean temp. at Greenwich this year was 49°·14. July was the hottest month with a temp. of 63°·3. March was the coldest month with a temp. of 39°·1. Percolation at Nash Mills went on for seven months, and 7·42 in. percolated out of a rainfall of 26·63 in. High water at Godstone Quarries May 2nd. Cold spring and hot summer. Wheat 62s. 8d. per qr.</p>
1857	26126	259	780	442	16·9	<p>In Jan. and Feb. the most and same number of deaths. The zymotic death-rate this year in Croydon was 2·45, the fever death-rate 0·54 and the diarrhoea death-rate 0·77 per 1000. In London the death-rate this year was 22·4, and the birth-rate 34·0 per 1000. The rainfall at Greenwich for this year was 21·16 in. The most 4·20 in. fell in Oct., and the least 0·20 in. fell in Feb. The rainfall at Croydon was 24·88 in., and the mean temp. of the year 51°·99. The mean temp. at Greenwich was 51°·24. The warmest month was Aug. with a temp. of 65°·7. The coldest month was Jan. with a temp. of 36°·8. Medium winter. Early spring. Hot summer. Water in the chalk abundant all the year, never very high or low. Percolation at Nash Mills went on for six</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1858	27193	252	840	525	19.3	<p>months in the year, and 7·46 in. percolated out of a rainfall of 28·13 in. High water at Godstone Quarries on 10th March. Wheat 56s. 10d. per quarter.</p> <p>In Dec. the greatest number of deaths. The zymotic death-rate in Croydon was 3·20, the fever death-rate 0·81 and the diarrhoea death-rate 0·48 per 1000. There were 15 deaths from fever in Sept. and Oct., which if continued at the same rate would have given a fever death-rate of 3·31 per 1000 in the year. In London the death-rate this year was 23·9, and the birth-rate 33·2 per 1000. The rainfall at Greenwich this year was 17·70 in. The most 3·00 in. fell in July, and the least 0·50 in. fell in Nov. In Croydon the rainfall was 18·08 in., and the mean temp. 49°·52. The mean temp. at Greenwich was 49°·50. The warmest month was June which had a temp. of 64°·8, and the coldest month Feb. which had a temp. of 35°·4. Percolation at Nash Mills went on for three months Feb. to April, and 3·21 in. percolated out of a rainfall of 20·50 in. This was a very hot summer, and the water in the chalk fell to a low level by the end of the year. A dry year; the summer quarter most unhealthy in Croydon. Fine harvest. Wheat 44s. 2d. per quarter.</p>
1859	28304	239	931	545	19.3	<p>In Aug. the greatest number of deaths. The zymotic death-rate in Croydon was 3·60, the fever death-rate 0·35, and the diarrhoea death-rate 1·34 per 1000. In London the death-rate was 22·7, and the birth-rate 34·1 per 1000. The rainfall at Greenwich this year was 25·83 in. The most 3·80 in. fell in Sept., and the least 0·80 in. fell in Jan. In Croydon the rainfall was 31·82 in., and the mean temp. 51°·07. The mean temp. at Greenwich was 50°·87. July was a very hot month with a temp. of 68°·9. The coldest month was Dec. with a temp. of 34°·9. Percolation at Nash Mills went on for three months, Feb., Nov. and Dec., and 4·59 in. percolated out of a rainfall of 32·62 in. High water in Godstone Quarries 30th December. Wheat varied in price from 35s. to 50s. per quarter.</p>
1860	29460	286	958	508	17·2	<p>In Feb. and April the largest and same number of deaths. The zymotic death-rate in Croydon was 1·32, the fever death-rate 0·24 and the diarrhoea death-rate 0·27 per 1000. In London the death-rate this year was 22·5, and the birth-rate 33·7 per 1000. The rainfall at Greenwich was 31·90 in. The most, 5·80 in., fell in</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1861	30663	281	998	562	18·3	<p>June, and the least 1·00 in. fell in April. The Croydon rainfall was 33·82 in., and the mean temp. of the year 47°·29. The mean temp. at Greenwich this year was 47°·57. The warmest month of the year was Aug. with a temp. of 58°·3. The coldest month was Feb. with a temp. of 35°·7. On Christmas Eve the lowest temp. ever recorded of 13°·8 below zero on the grass at Nottingham. It was a cold wet summer, a cold and wet year. Percolation at Nash Mills went on for ten months, and 12·11 in. percolated out of a rainfall of 34·22 in. High water in Godstone Quarries July 23rd. The Croydon Bourne was flowing in Dec. this year in Caterham Valley. Harvest was late. Seen leading beans in Lincolnshire on Dec. 25. Wheat 58s. 8d. per quarter.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon was 1·57, the fever death-rate 0·36, and the diarrhoea deaths 0·65 per 1000. In London the death-rate this year was 23·2, and the birth-rate 34·5 per 1000. The rainfall at Greenwich was 20·45 in., of which the most 5·07 in. fell in Nov., and the least 0·55 in. fell in Jan. The rainfall at Croydon was 22·18 in., and the mean temp. 50°·26 this year. The mean temp. at Greenwich this year was 50°·03. The highest monthly temp. was 64°·2 in Aug., and the lowest 36°·8 in Jan. Percolation at Nash Mills went on for seven months, and 7·16 in. percolated out of a rainfall of 21·20 in. Frost and snow in Jan., showery July, dry and hot Aug., very wet Nov. High water in Godstone Quarries April 3rd. There was a flow of the Bourne this year in the Caterham Valley. Wheat 55s. 4d. per quarter.</p>
1862	32574	336	1086	598	18·4	<p>In Dec. the greatest number of deaths. The zymotic death-rate of Croydon was 3·22, the fever death-rate 0·83 and the diarrhoea death-rate 0·37 per 1000. In London the death-rate this year was 23·6, and the birth-rate 34·2 per 1000. The rainfall at Greenwich this year was 26·32 in. The most 4·07 in. fell in Oct., and the least 0·46 fell in Feb. The rainfall at Croydon was 30·34 in., and the mean temp. of the year 50°·05. The mean temp. at Greenwich was 49°·94. The warmest month was Aug. which had a temp. of 59°·7. Jan. and Feb. had each a temp. of 40°·5. Percolation at Nash Mills went on for six months in the year, but for six consecutive months there was no perco-</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1863	34604	360	1174	718	20·7	<p>lation. The total amount percolating was 8·09 in., out of a rainfall of 27·44 in. High water in Godstone Quarries occurred on the 29th May. Wheat 55s. 5d. per qr.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 5·46, the fever death-rate 0·55, and the diarrhoea death-rate 1·04 per 1000. In London the death-rate this year was 24·5, and the birth-rate 35·2 per 1000. The rainfall at Greenwich this year was 19·66 in., of which the most 3·91 in. fell in June, and the least 0·45 in. fell in April. The rainfall at Croydon was this year 25·57 in., and the mean temp. 50°·52. The mean temp. at Greenwich was 50°·66. Aug. was the warmest month with a temp. of 62°·5, and Jan. and Feb. the coldest months, each having a temp. of 42°·2. The percolation at Nash Mills this year was 3·33 in., out of a rainfall of 22·76 in. There was no percolation for nine consecutive months, March to Nov. High water in Godstone Quarries occurred on 4th March. Reported that there was a small flow of the Croydon Bourne this year. Wheat 44s. 9d. per quarter.</p>
1864	36760	380	1284	791	21·5	<p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 3·84, the fever death-rate 0·74, and the diarrhoea death-rate 1·17 per 1000. In London this year the death-rate was 26·5, and the birth-rate 34·8 per 1000. The rainfall at Greenwich this year was 16·38 in., of which the most 2·76 in. fell in Sept. and the least 0·27 in. fell in July. The rainfall at Croydon was 19·26 in., and the mean temp. 48°·98. The mean temp. at Greenwich this year was 48°·96. The warmest month was July with a temp. of 62°·8, and the coldest month was Feb. with a temp. of 36°·2. Percolation at Nash Mills went on for the first four months of the year, and 2·88 in. percolated out of a rainfall of 16·96 in. High water in Godstone Quarries occurred on 16th April. In this year the springs in the chalk fell very low. Wheat 40s. 3d. per quarter.</p>
1865	39050	451	1423	885	22·7	<p>In Dec. the greatest number of deaths. The zymotic death-rate of Croydon this year was 4·84, the fever death-rate 1·33, and the diarrhoea death-rate 1·26 per 1000. There was an epidemic of enteric fever in Croydon this year. There were 63 deaths from fever in the course of the year, of which 17 occurred in Nov. and 25 in Dec. In London this year the death-rate was 24·6, and the birth-rate 35·7 per 1000.</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1866	41484	476	1607	918	22·1	<p>The rainfall at Greenwich this year was 28·70 in. The largest quantity 5·90 in. fell in Oct., and the smallest 0·40 in. fell in April. The rainfall at Croydon was 31·41 in., and the mean temp. 50°·48. The mean temp. at Greenwich this year was 50°·87. The warmest month was July with a temp. of 64°·9, and the coldest month Jan. with a temp. of 36°·5. Percolation at Nash Mills 7·14 in., out of a rainfall of 30·25 in. High water in Godstone Quarries on 14th Feb. The springs at Croydon ceased to flow out of the Bourne Culvert this year, but afterwards rose rapidly, and a Bourne flow followed. The first three months of the year cold. The summer was hot. Sept. was a very warm month. End of year mild and wet. Wheat variously stated to have been 41s. and 46s. 6d. per qr.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 4·10, the fever death-rate 1·23, and the diarrhoea death-rate 0·82 per 1000. The fever epidemic continued in this year, when there were 55 deaths from fever, of which 16 occurred in Jan. This was a cholera year, and six deaths from this disease occurred in Croydon. In London the death-rate this year was 26·5, and the birth-rate 35·8 per 1000. The rainfall at Greenwich this year was 30·72 in., of which the most, 4·03 in., fell in Feb. The least, 1·48 in., fell in Nov. The rainfall at Croydon was 32·38 in., and the mean temperature 49°·91. The temperature at Greenwich this year was 50°·40. July was the warmest month, with a temperature of 61°·9. The coldest month was March, which had a temperature of 41°·2. The percolation at Nash Mills was 7·75 in. in the course of the year, out of a rainfall of 30·21 in. High water in Godstone Quarries on 17th March. There was a very copious flow of the Bourne this year at Croydon. There was a flow of the Bourne out of Orpington Gravel-pits this year. Cattle plague rampant. Wheat 49s. 11d. per qr.</p>
1867	44069	455	1767	846	19·2	<p>In Dec. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·11, the fever death-rate 0·29, and the diarrhoea death-rate 0·77 per 1000. In London the death-rate this year was 23·0, and the birth-rate 36·6 per 1000. The rainfall at Greenwich this year was 28·46 in., of which the most, 5·81 in., fell in July, and the least, 0·42 in., fell in Nov. The rainfall at Croydon this year was 25·04 in., and the mean temperature 48°·64. There</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1868	46815	519	1968	1074	22·9	<p>was a snowstorm on 22nd May at Croydon, being Derby Day. The mean temperature at Greenwich was $48^{\circ}80$. The warmest month was Aug., which had a temperature of $62^{\circ}5$. The coldest month was Jan., the temperature being $34^{\circ}6$. Percolation at Nash Mills 3·85 in. out of a rainfall of 25·84 in. High water in Godstone Quarries occurred on 20th April. A temperature of -12° recorded at Epsom on 4th Jan. Deep snows. March was a cold month. July wet. Crops deficient. Wheat 64s. 5d. per qr.</p> <p>In July the greatest number of deaths. The zymotic death-rate of Croydon this year was 4·74, the fever death-rate 0·77, and the diarrhoea death-rate 1·22 per 1000. In London the death-rate was 23·6, and the birth-rate 36·4 per 1000. The rainfall at Greenwich this year was 25·15 in., of which the most, 5·45 in., fell in Dec., and the least, 0·47 in., fell in June. The rainfall at Croydon was 24·58 in., and the mean temperature $51^{\circ}90$. The mean temperature at Greenwich this year was $52^{\circ}02$. July was the warmest month, with a temperature of $68^{\circ}1$. Jan. was the coldest month, with a temperature of $37^{\circ}6$. Percolation at Nash Mills 4·75 in., out of a total rainfall of 27·33 in. This was a dry year, very hot summer, good and early harvest. Wheat 63s. 9d. per quarter.</p>
1869	49732	468	1966	1073	21·6	<p>In Dec. the greatest number of deaths. The zymotic death-rate of Croydon this year was 3·78, the fever death-rate 0·38, and the diarrhoea death-rate 0·89 per 1000. In London the death-rate this year was 24·6, and the birth-rate 35·4 per 1000. The rainfall at Greenwich this year was 24·02 in. The most, 3·08 in., fell in Sept., and the least, .55 in., fell in July. In Croydon the rainfall was 25·38 in., and the mean temperature $50^{\circ}27$. The mean temperature at Greenwich this year was $49^{\circ}5$. July was the warmest month, with a temperature of $64^{\circ}5$, and March was the coldest month, with a temperature of $37^{\circ}5$. At Nash Mills the percolation was 4·75 in. out of a rainfall of 27·67 in. Fine warm summer, not so hot as last year. Sept. wet and gloomy. Dec. wet, with frost and snow at end. Wheat 48s. 2d. per quarter.</p>
1870	52831	428	2053	1057	20·0	<p>In Dec. the greatest number of deaths. The zymotic death-rate in Croydon this year was 4·09, the fever death-rate 0·34, and the diarrhoea death-rate 0·98 per 1000. In London the death-rate this year was 24·1 and the birth-rate 35·4 per 1000. The rainfall at Greenwich this year was 18·55 in.,</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1871	56123	450	1906	1117	19·9	<p>the most, 3·34 in., fell in Oct., and the least, 0·28 in., fell in April. The rainfall at Croydon this year was 22·17 in., and the mean temperature 49°·43. The mean temp. at Greenwich this year was 48°·7. July was the warmest month, with a temperature of 65°·4, and Dec. was the coldest month, with a temperature of 33°·6. At Nash Mills the percolation was 4·37 in. out of a rainfall of 21·64 in. March was a cold month. In Dec. great snows and frost. Wheat 46s. 11d. per quarter.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate in Croydon this year was 4·03, the fever death-rate 0·39, and the diarrhoea death-rate 1·16 per 1000. Small-pox caused 58 deaths this year in Croydon. The death-rate in London this year was 24·7 and the birth-rate 34·5 per 1000. The rainfall at Greenwich this year was 22·30 in., the most, 3·25 in., fell in July, and the least, 0·57 in., fell in Nov., The rainfall in Croydon was 24·54 in., and the mean temperature 49°·57. The mean temperature at Greenwich this year was 48°·7. Aug. was the warmest month, with a temperature of 64°·8. The coldest month was Jan., which had a mean temperature of 33°·2. At Nash Mills the percolation was 1·36 in. out of a rainfall of 23·49 in. Weather very severe in Jan. April showery. Nov. and Dec. cold. Was a dry year. Wheat was 56s. 8d. per quarter.</p>
1872	58120	474	2006	1039	17·9	<p>In Aug. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·87, the fever death-rate 0·41, and the diarrhoea death-rate 0·72 per 1000. The death-rate in London this year was 21·4, and the birth-rate 35·6 per 1000. The rainfall at Greenwich this year was 30·02 in., of which the most, 4·34 in., fell in Oct., and the least, 0·77 in., fell in Feb. The rainfall of Croydon this year was 35·27 in., and the mean temperature 52°·79. The mean temperature at Greenwich this year was 50°·7. July was the warmest month, with a mean temperature of 65°·0. The coldest month of the year was Jan., which had a temperature of 41°·3. The percolation at Nash Mills this year was 11·31 in., out of a rainfall of 36·28 in. This was a warm, dripping year, and gave rise to very favourable conditions for health in the next year. Wheat 57s. per quarter.</p> <p>In March the greatest number of deaths. The zymotic death-rate in Croydon this year was 1·35, the fever death-rate 0·15, and the diarrhoea death-rate 0·63 per 1000.</p>
1873	60188	518	2070	999	16·6	

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1874	62330	499	2045	1093	17·5	<p>In London the death-rate this year was 22·4 and the birth-rate 35·3 per 1000. The rainfall at Greenwich this year was 23·36 in., of which the most, 3·18 in. fell in Aug., and the least, 0·31 in., fell in Dec. The rainfall in Croydon this year was 25·71 in., and the mean temperature 49°·70. The mean temperature at Greenwich this year was 48°·9. July was the warmest month, with a temperature of 63°·4, and Feb. was the coldest month, with a temperature of 35°·0. Percolation at Nash Mills was 5·59 in. out of a rainfall of 23·99 in. High water in Godstone Quarries occurred on the 1st April. For the previous five years these marks are missing. The Croydon Bourne flowed in the Caterham Valley this year. There was a flow of the Bourne out of Orpington Gravel-pits this year. Wheat was 58s. 8d. per quarter.</p> <p>In Dec. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·45, the fever death-rate 0·27, and the diarrhoea death-rate 0·47 per 1000. In London the death-rate this year was 22·4, and the birth-rate 35·6 per 1000. The rainfall at Greenwich was 19·95 in., the most, 3·58 in., fell in Oct., and the least, 0·42 in., fell in May. The rainfall at Croydon was 25·71 in., and the mean temperature 50°·3. The mean temperature of this year at Greenwich was 49°·3. July was a warm month, with a temperature of 64°·4. Dec. was the coldest month, with a temperature of 33°·2. The percolation at Nash Mills this year was but 2·76 in. out of a rainfall of 21·63 in. High water in Godstone Quarries on 4th May. In this year the water in wells about Croydon scarcely rose at all. There was a constant fall in the ground water from the high water of 1873 to the beginning of 1875. Wheat 55s. 9d. per quarter.</p>
1875	64548	664	2155	1362	21·1	<p>In Dec. the greatest number of deaths. The zymotic death-rate of Croydon this year was 3·58 per 1000, the fever death-rate 1·39, and the diarrhoea death-rate 0·77 per 1000. In this year and beginning of next year enteric fever epidemic in Croydon. In this year it was reported that 1200 cases of fever in Croydon. In London the death-rate this year was 23·5, and the birth-rate 35·4 per 1000. The rainfall at Greenwich this year was 27·97 in. The most, 5·28 in., fell in July, and the least, 0·56 in., fell in March. In Croydon the rainfall was 26·87 in., and the mean temperature of the year 50°·40. The mean</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1876	66845	569	2240	1230	18·4	<p>temperature at Greenwich this year was $49^{\circ}3$. Aug. was the warmest month, the temperature of which was $63^{\circ}0$, and Feb. was the coldest month, with a temperature of $35^{\circ}2$. It was high water in Godstone Quarries on 12th April. The percolation at Nash Mills was 6·33 in. out of a rainfall of 29·35 in. In the spring of this year the Croydon branch of the River Wandle was dry at Waddon. Fever in Croydon coincides with the dry and hot periods on the rise of the subsoil water after being very low. Wheat was 45s. 1d. per quarter.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate at Croydon this year was 3·40, the fever death-rate 0·51, and the diarrhoea death-rate 0·69 per 1000. In London the death-rate this year was 21·9, and the birth-rate 35·9 per 1000. The rainfall at Greenwich this year was 24·10 in., the most, 5·76 in., fell in Dec., and the least, 0·67 in., fell in July. At Park Hill, Croydon, the rainfall was 26·39 in., of which 7·21 in. fell in Dec. The mean temperature of Croydon this year was $51^{\circ}20$, and of Greenwich $50^{\circ}1$. July was the warmest month, with a temperature of $65^{\circ}9$. The coldest month was Jan., which had a temperature of $37^{\circ}0$. It was high water in Godstone Quarries on 20th April. The percolation at Nash Mills was 8·80 in. out of a rainfall of 33·15 in. There was a small Bourne flow this year at Croydon, and a large flow the following year. Wheat 46s. 2d. per quarter.</p>
1877	69224	567	2186	1193	17·2	<p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·57, the fever death-rate 0·36, and the diarrhoea death-rate 0·46 per 1000. In London the death-rate this year was 21·5, and the birth-rate 35·6 per 1000. The rainfall at Greenwich this year was 27·28 in. At Park Hill, Croydon, it was 33·28 in. The most rainfall in Croydon in Jan. 5·57 in., and the least 0·89 in. in June. The mean temperature at Croydon this year was $49^{\circ}37$. Aug. was the warmest month, with a temperature of $62^{\circ}6$, and Dec the coldest month, with a temperature of $39^{\circ}0$. It was high water in Godstone Quarries on 1st May. There was 7·74 in. of water percolated at Nash Mills out of a rainfall of 32·49 in. There was a copious flow of the Croydon Bourne this year. It commenced to flow on 18th Jan., and flowed until 6th Aug. Maximum flow below 'Rose and Crown,' Coulsdon, 1745·7 cubic ft. per minute. There was a flow of</p>

Year	Popula- tion	Mari- ages	Bir- ths	Dea- ths	Death rate per 1000
1878	71687	523	2,114	1,254	17.5
1879	74233	549	2,376	1,262	17.6
1880	76286	703	2,456	1,242	16.2

the Bourne out of the Orpington Gravel pits this year. There was a deficiency in crops. Wheat 5s. 6d. per quarter.

In July the greatest number of deaths. The zymotic death rate of Croydon this year was 2.73, the fever death-rate 6.28, and the diarrhoea death-rate 0.65 per 1000. The death rate in London this year was 22.1, and the birth rate 25.5 per 1000. The rainfall at Greenwich this year was 28.66 in., and the mean temperature 49°.70. At Park Hill, Croydon, the rainfall was 26.22 in., the most, 5.73 in., fell in Aug.; and the least, 0.66 in., fell in July. The mean temperature at Croydon was 45°.73. The warmest month was July, which had a temperature of 63°.2. The coldest month was Dec., which had a temperature of 32°.4. Percolation at Nash Mills was 6.91 in. out of a rainfall of 26.27 in. It was high water in Godstone Quarries on 15th May. There was a small Bourne flow at Croydon this year. It commenced to flow 29th April, and flowed to 13th June. Maximum flow 24.5 ft. per minute. Wheat 4s. 5d. per quarter.

In March the greatest number of deaths. The zymotic death rate of Croydon this year was 1.74, the fever rate 6.22, and the diarrhoea rate 6.32 per 1000. In London the death rate was 22.6, and the birth-rate 25.6 per 1000. The rainfall at Greenwich this year was 21.36 in., and the mean temperature 46°.42. At Park Hill, Croydon, the rainfall was 26.31 in.; the most, 4.26 in., fell in August, and the least, 0.34 in., fell in March. The mean temperature at Croydon this year 46°.47. The warmest month was Aug. with a temperature of 67°.5, and the coldest month Dec., with a temperature of 32°.6. Jan. of this year was also equally cold. At Nash Mills the percolation was 10.64 in. out of a rainfall of 24.23. At Croydon, in this year, the percolation through a chalk garage was 17.16 in. out of the rainfall before given. The highest water in Godstone Quarries on 20th Oct. The Bourne flowed nearly all this year. It commenced to flow on 16th Feb., and flowed to 16th Dec. Maximum flow 233.6 ft. per minute. This was a cold, wet year, disastrous to agriculture, but a very healthy year. No low water. Percolation at Croydon went on during every month of the year. Wheat 4s. 10d. per quarter.

In Jan. the greatest number of deaths. The zymotic death rate of Croydon this year was 2.85, the fever rate 6.17, and the

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1881	79536	719	2641	1284	16·1	<p>diarrhoea rate 0·92 per 1000. In London the death-rate this year was 21·7, and the birth-rate 35·3 per 1000. The rainfall at Greenwich this year was 29·68 in., and the mean temperature 49°·5. The rainfall at Croydon was 30·00 in. The most, 7·37 in., fell in Oct., and the least, 0·37 in., fell in May. The percolation at Croydon from this rainfall was 14·83 in. The mean temperature at Croydon was 49°·84. Aug. was the warmest month, with a temperature of 63°·9, and Jan. was the coldest month, with a temperature of 33°·4. High-water in Godstone Quarries on March 25th. July and Aug. warm months, Sept. to Dec., inclusive, very wet. The Croydon Bourne commenced to flow on 12th Dec., 1880, and flowed to the 23rd June, 1881. Maximum flow 642·0 cubic feet per minute. Wheat 44s. 4d. per quarter.</p> <p>In Dec. the greatest number of deaths. The zymotic death-rate of Croydon was 2·01. The fever death-rate 0·18, and the diarrhoea death-rate 0·54 per 1000. The death-rate in London this year was 21·2, and the birth-rate 34·7 per 1000. The rainfall at Greenwich this year was 25·72 in., and the mean temp. 48°·8. The rainfall at Croydon this year was 25·17 in.; the most 3·92 in. fell in Aug., and the least 0·49 in. fell in April. The percolation at Croydon was 11·25 in. from this rainfall. The mean temp. at Croydon was 48°·73. July was a very warm month with a temp. of 65°·1. The coldest month was Jan., whose mean temp. was 31°·2. The Croydon Bourne continued to flow until June 23rd this year, indicating the height of the chalk springs. Wheat was 45s. 4d. per qr.</p>
1882	81657	721	2816	1438	17·6	<p>In Feb. the greatest number of deaths. The zymotic death-rate of Croydon was this year 2·41; the fever death-rate 0·12, and the diarrhoea death-rate 0·51 per 1000. In London the death-rate this year was 21·3, and the birth-rate 34·2 per 1000. The rainfall at Greenwich this year was 25·18 in., and the mean temp. 49°·9. The rainfall at Croydon this year was 25·41, of which the largest quantity 5·55 in. fell in Oct., and the least 0·83 in. fell in March. The mean temp. this year at Croydon was 49°·67. July was the warmest month with a temp. of 60°·5. The coldest month was Dec., which had a temp. of 39°·2. The percolation at Croydon was 10·32 in. There was a Bourne flow this year; commenced to flow on Jan. 12th, and ceased to flow on May 4th. Maximum flow of</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1883	83681	689	2798	1250	14·9	<p>the Bourne 100·6 cubic ft. per minute. In the middle of Feb. there was an epidemic of diarrhoea in Croydon Waterworks District coincident with the removing of a stoppage from a sewer in the neighbourhood of the waterworks, and the escape of sewage into the subsoil close to the Waterworks Wells, but it was not of a fatal character, except the deaths among children under five years of age was very high in the Croydon Water district. The rainfall this year was just a shade under the average. The temp. was also about the average. Wheat 45s. 1d. per qr.</p> <p>In May the largest number of deaths. The zymotic death-rate of Croydon this year was 1·34; the fever death-rate 0·17, and the diarrhoea death-rate 0·48 per 1000. The death-rate in London this year was 20·5, and the birth-rate 34·0 per 1000. The rainfall at Greenwich this year was 21·91 in., and the mean temp. 49°·4. The rainfall at Croydon this year was 23·15 in. The most 4·08 in. fell in Feb., and the least 0·58 in. fell in Dec. The mean temp. at Croydon this year was 49°·35. Aug. was the only warm month, and had a temp. of 62°·8. The coldest month was March, which had a temp. of 36°·2. The percolation at Croydon this year was 9·32 in. Springs very high this year; a very copious flow of Croydon Bourne commenced on Jan. 12th, and continued to June 11th. Maximum flow of the Bourne 738·4 cubic ft. per minute. Classed as a wet year. Wheat 41s. 7d. per quarter.</p>
1884	85913	710	2827	1423	16·6	<p>In Aug. the largest number of deaths. The zymotic death-rate of Croydon this year was 2·26; the fever death-rate 0·15 and the diarrhoea death-rate 0·87 per 1000. The death-rate in London this year was 20·4, and the birth-rate 33·7 per 1000. The rainfall at Greenwich this year was 18·05 in., and the mean temp. 50°·7. The rainfall at Croydon this year was 19·28 in.; the most 2·49 in. fell in Jan., and the least 0·62 in. fell in May. The amount of rain percolating at Croydon this year was 4·96 in. The mean temp. at Croydon this year was 50°·61. The warmest month was Aug., which had a temp. of 65°·1. The coldest month was Dec., which had a temp. of 40°·6. The winter mild. April cold and dry. Summer warm. The autumn mild. This was a dry year. Wheat 35s. 8d. per qr.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·74; the fever death-rate 0·12,</p>
1885	88204	630	2745	1493	16·9	

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1886	90556	635	2692	1323	14·6	<p>and the diarrhoea death-rate 0·48 per 1000. The death-rate in London this year was 19·7, and the birth-rate 32·6 per 1000. The rainfall at Greenwich this year was 24·00 in., and the mean temp. 48°·7. At Croydon this year the rainfall was 26·14 in.; the most 4·18 in. fell in Sept., and the least 0·25 in. fell in July. The percolation at Croydon was 9·88 in. this year. The mean temp. at Croydon this year was 48°·67. July was the warmest month with a temp. of 63°·8. Jan. was the coldest month with a temp. of 35°·9. The rainfall this year above the average, and the temp. below the average. Wheat 32s. 10d. per qr.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 1·55; the fever death-rate 0·06, and the diarrhoea death-rate 0·78 per 1000. The death-rate in London this year was 19·9, and the birth-rate 32·4 per 1000. The rainfall at Greenwich this year was 24·21 in., and the mean temp. 48°·8. At Croydon this year the rainfall was 25·97 in.; the most 4·30 in. which fell in Dec., and the least 0·43 in. fell in Feb. The quantity of water percolating at Croydon in this year was 10·77 in. The mean temp. at Croydon this year was 48°·58. July was the warmest month with a temp. of 62°·3. Feb. was the coldest month with a temp. of 33°·3. The rainfall this year was just about the average, the temp. of the year below the average. Jan., May and Dec. were wet months with considerable percolation. Wheat 31s. per quarter.</p>
1887	92971	633	2598	1374	14·8	<p>In Nov. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·24; the fever death-rate 0·10 and the diarrhoea death-rate 0·63 per 1000. The death-rate in London this year was 19·5, and the birth-rate 31·6 per 1000. The rainfall at Greenwich this year was 19·86 in., and the mean temp. 47°·9. The rainfall at Croydon this year was 22·15 in., of which the most 4·69 in. fell in Nov., and the least 0·46 in. fell in Feb. The quantity of water percolating at Croydon was 4·68 in. The mean temp. at Croydon this year was 47°·71. July was the warmest month with a temp. of 65°·2, and Jan. was the coldest month with a temp. of 35°·1. Both the rainfall and temp. this year below the average, but the springs high. There was a moderate flow of the Croydon Bourne, Feb. to middle of April. Jan. a cold month, with several snowstorms; summer warm; Dec. cold. Wheat 32s. 6d. per qr.</p>

Year	Popula-tion	Marri-ages	Bir-ths	Dea-ths	Death rate per 1000	
1888	95450	659	2675	1261	13·2	In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 1·27; the fever death-rate 0·16, and the diarrhoea death-rate 0·33 per 1000. In London the death-rate this year was 18·4, and the birth-rate 30·7 per 1000. The rainfall at Greenwich this year was 27·51 in., and the mean temp. 47°·8. At Croydon the rainfall this year was 27·35 in. The most 7·35 in. fell in July, and the least 0·83 in. fell in Jan. The amount of percolation this year was 13·58 in. The mean temp. at Croydon this year was 47°·83. Aug. was the warmest month with a temp. of 59°·6, and Feb. was the coldest month with a temp. of 34°·8. Snow fell in April, and on July 11th. July was the wettest month. Known as a cold year, with cold and wet summer. Wheat 31s. 10d. per qr.
1889	97996	760	2807	1362	13·9	In Dec the greatest number of deaths. The zymotic death-rate of Croydon this year was 1·64, the fever death-rate 0·13, and the diarrhoea death-rate 0·49 per 1000. In London the death-rate this year was 17·5, and the birth-rate 30·4 per 1000. The rainfall at Greenwich this year was 23·28 in., and the mean temp. 48°·8. At Croydon the rainfall was 24·94 in.; the most 4·20 in. fell in Oct., and the least 0·83 in. fell in Nov. The amount of rain percolating this year was 8·86 in. The mean temp. at Croydon this year was 48°·89. June and July had near the same temp. 61°·5. The coldest month was Dec., which had a mean temp. of 35°·4. In June the temp. was above the average. In July, Aug. and Sept. temp. below the average. The temp. of the year below the average. Rainfall just under the average. For ten months percolation was going on. There was a small flow of the Croydon Bourne in April of this year. Wheat 29s. 9d. per qr.
1890	100609	790	2716	1676	16·7	In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·67, the fever rate 0·11, and the diarrhoea rate 0·47 per 1000. In London the death-rate this year was 21·0, and the birth-rate 30·7 per 1000. The rainfall at Greenwich this year was 21·86 in., and the mean temp. 48°·6. At Croydon the rainfall was 23·61 in. The most 4·52 in. fell in July, and the least 0·53 in. fell in Sept. Percolation was going on every month of the year and the amount percolating at Croydon was 10·72 in. The mean temp. at Croydon this year was 48°·71. July, Aug., and Sept. temp. of each month about equal or 60°·1. Dec. was the coldest

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1891	103292	813	2832	1553	15·0	<p>month with a temp. of $28^{\circ}4$. The temp. and rainfall generally of the year were below the average. Wheat 31s. 11d. per qr.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate in Croydon this year was 0·98, the fever death-rate 0·11, and the diarrhoea death-rate 0·35 per 1000. In London the death-rate was 21·1, and the birth-rate 31·9 per 1000. The rainfall at Greenwich this year was 25·04 in., and the mean temp. $48^{\circ}4$. At Croydon the rainfall was 30·47 in. The most 6·01 in. fell in Oct., and the least 0·6 in. fell in Feb. The amount of rain percolating this year at Croydon was 19·19 in. The Croydon Bourne broke out in Dec. and was flowing in the next year. The mean temp. at Croydon this year was $48^{\circ}66$. The warmest month was July with a temp. of $60^{\circ}4$, and the coldest month was Jan., with a temp. of $33^{\circ}7$. The rainfall this year above the average. July and Aug. wet and cool. Wheat 37s. per quarter.</p>
1892	106070	761	2817	1729	16·3	<p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·02, the fever death-rate 0·07, and the diarrhoea death-rate 0·42 per 1000. In London the death-rate this year was 20·3, and the birth-rate 30·9 per 1000. The rainfall at Greenwich this year was 22·31 in., and the mean temperature $48^{\circ}1$. The rainfall at Croydon this year was 25·14 in., of which the most, 4·23 in., fell in Oct., and the least, 0·56 in., fell in Jan. The amount of rain percolating this year was 11·62 in. The Croydon Bourne was flowing in the beginning of this year. The mean temperature at Croydon this year was $48^{\circ}35$. Aug. only warm month, with a temperature of $62^{\circ}4$. The coldest month was Dec., with a temperature of $36^{\circ}1$. Both rainfall and temperature below the average. Percolation going on for ten months. Wheat 30s. 3d. per quarter.</p>
1893	108920	792	2852	1849	17·0	<p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·39, the fever death-rate 0·17, and the diarrhoea death-rate 0·87 per 1000. In London the death-rate this year was 20·8, and the birth-rate 30·9 per 1000. The rainfall at Greenwich this year was 20·12 in. The mean temperature at Greenwich $51^{\circ}1$. The rainfall at Croydon this year was 19·78 in., of which the most, 3·48 in., fell in Oct., and the least, 0·09 in., fell in April. The amount</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1894	111850	813	2867	1559	13·9	<p>of rain percolating at Croydon this year was 5·73 in. For eight months in the year there was percolation through the gravel-gauge, but only for four months through the chalk-gauge. The mean temperature at Croydon this year was 51°·05. The highest temperature was in Aug., the average being 65°·3. The lowest temperature, 34°·9, was in Jan. It was a dry and warm year. In April this year there was a small flow of the Croydon Bourne in Caterham Valley. Wheat was 26s. 4d. per quarter.</p> <p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 1·66, the fever death-rate 0·06, and the diarrhoea death-rate 0·21 per 1000. In London the death-rate this year was 17·4, and the birth-rate 30·2 per 1000. The rainfall at Greenwich this year was 26·89 in., and the mean temperature 49°·9. The rainfall at Croydon this year was 31·41 in. The most, 5·25 in., fell in Oct., and the least, 1·14 in., fell in March. The amount of rain percolating at Croydon this year was 16·00 in. Percolation going on during the whole year. The mean temperature at Croydon this year was 50°·18. The warmest month was July, with a temperature of 62°·9. The coldest month was Jan., with a temperature of 37°·8. This was a wet and warm year. The temperature slightly above the average. Rainfall much in excess of the average. Wheat 22s. 10d. per quarter.</p>
1895	114820	820	2906	1700	14·8	<p>In March the greatest number of deaths. The zymotic death-rate of Croydon this year was 1·31, the fever death-rate 0·13, the diarrhoea death-rate 0·56 per 1000. In London the death-rate this year was 19·5, and the birth-rate 30·6 per 1000. The rainfall at Greenwich this year was 19·73 in., and the mean temperature 49°·3. At Croydon the rainfall this year was 21·12 in. The most, 4·04 in., fell in Nov., and the least, 0·29 in., fell in Feb. The amount of rain percolating at Croydon was 8·40 in., and percolation went on every month of the year excepting July. The mean temperature at Croydon this year was 49°·42. July was the warmest month, with a temperature of 62°·8; but both Aug. and Sept. had a temperature exceeding 62°·5. June was also a warm month. The coldest month was Feb., which had a temperature of only 28°·5. This was a dry year, with extremes of temperature. In this year</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1896	117940	887	2974	1741	14·8	<p>the Croydon Bourne just appeared in its old channel but did not flow. Wheat 23s. 1d. per quarter.</p> <p>In July the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·18. The fever death-rate 0·16 and the diarrhoea death-rate 0·61 per 1000. In London the death-rate this year 18·2 and the birth-rate 30·2 per 1000. The rainfall at Greenwich this year was 22·42 in., and the mean temp. 50°·1. The rainfall at Croydon this year was 26·04 in. The most rain 7·00 in. fell in Sept., and the least 0·13 in. fell in Feb. The quantity of rain percolating was 8·46 in. Percolation every month except July. The mean temp. of Croydon this year was 50°·31. The warmest month was July with a temp. of 64°·7, and the coldest month was Dec. with a temp. of 39°·3. The rainfall at Croydon slightly above the average, and the temp. also. Wheat 26s. 2d. per quarter.</p>
1897	121110	969	3014	1633	13·5	<p>In Aug. the greatest number of deaths. The zymotic death-rate of Croydon this year was 1·71, the fever death-rate 0·08, and the diarrhoea death-rate 1·05 per 1000. In London the death-rate this year was 17·8, and the birth-rate 30·1 per 1000. The rainfall at Greenwich this year was 22·13 in., and the mean temp. 50°·3. The rainfall at Croydon this year was 23·96 in. The most 3·96 in. fell in March, and the least 0·62 in. fell in Oct. The amount of rain percolating at Croydon in seven months of this year was 8·61 in. The mean temp. of Croydon this year was 50°·53. July was the warmest month with a temp. of 64°·2, and January was the coldest month with a temp. of 35°·5. The rainfall this year was under the average and the temp. was above the average. In this year there was a moderate flow of the Croydon Bourne. Wheat 30s. 2d. per quarter.</p>
1898	124380	1033	3150	1795	14·4	<p>In Sept. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·50, the fever death-rate 0·09, and the diarrhoea death-rate 1·62 per 1000. In London this year the death-rate was 18·3, and the birth-rate 29·5 per 1000. The rainfall at Greenwich this year was 18·85 and the mean temp. 51°·3. The rainfall at Croydon this year was 20·40 in. The most 3·19 in. fell in Nov., and the least 0·47 in. fell in Sept. The amount of rain percolating at Croydon in nine months of this year was 6·75 in. The</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
1899	127720	1089	3215	2000	15·7	<p>mean temp. at Croydon this year was 51°·36. The warmest month was Aug. which had a temp. of 64°·8, and the coldest month was March which had a temp. of 40°·4. The rainfall this year was under the average, and the temp. exceeded the average. The springs in the chalk fell to a low level this year. Wheat 3<i>s.</i> per quarter.</p> <p>In Aug. the greatest number of deaths. The zymotic death-rate of Croydon this year was 2·23. The fever death-rate 0·08, and the diarrhoea death-rate 1·55 per 1000. In London the death-rate this year was 19·4, and the birth-rate 29·3 per 1000. The rainfall at Greenwich this year was 22·33 in., and the mean temp. 50°·6. The rainfall at Croydon this year was 23·37 in. The most 4·52 in., fell in Nov., and the least 0·64 in. fell in July. The amount of rain percolating in eight months of this year at Croydon was 9·25 in. The mean temp. at Croydon this year was 51°·03. Aug. was the warmest month which had a temp. of 67°·0. The coldest month was Dec. which had a temp. of 36°·3. The rainfall this year was under the average, and the temp. was above the average. It was a very warm summer. Wheat 25<i>s.</i> 8<i>d.</i> per quarter.</p>
1900	131150	1035	3261	1983	15·1	<p>In Jan. the greatest number of deaths. The zymotic death-rate of Croydon this year was 1·55. The fever death-rate 0·07 and the diarrhoea death-rate 0·86 per 1000. In London the death-rate this year was 18·7, and the birth-rate 29·2 per 1000. The rainfall at Greenwich this year was 22·31 in., and the mean temp. 50°·4. The rainfall at Croydon this year was 25·26 in., the most 4·59 in. fell in Feb., and the least 0·80 in. fell in Sept. The percolation this year at Croydon in six months was 10·82 in. The mean temp. at Croydon this year was 50°·84. July was the warmest month with a temp. of 67°·5, and Feb. was the coldest month with a temp. of 37°·9. The rainfall this year was very slightly under the average and the temp. was above the average. Wheat 26<i>s.</i> 11<i>d.</i> per quarter.</p>
1901	134675	1114	3578	1831	13·6	<p>In Aug. the greatest number of deaths. The zymotic death-rate of Croydon this year was 1·56, the fever death-rate 0·08, and the diarrhoea death-rate 1·23 per 1000. The death-rate in London this year was 17·2, and the birth-rate 29·0 per 1000. The rainfall this year at Greenwich was 20·29 in., and the mean temp. 49°·2. At</p>

Year	Popu- lation	Marri- ages	Bir- ths	Dea- ths	Death rate per 1000	
						Croydon the mean rainfall was 21.94 in. The most 4.02 in. fell in Dec., and the least 0.67 in. fell in Nov. The quantity of rain percolating at Croydon in five months was 8.55 in. The mean temp. at Croydon this year was 49°.19. The warmest month was Aug. which had a temp. of 63°.3, and the coldest month was Feb. which had a temp. of 35°.8. Both the rainfall and the temp. this year under the average. Wheat was 26s. 9d. per qr.

NOTE.—The mean yearly temperature at Croydon for the last 31 years was 49°.54. The mean rainfall at Croydon for the last 31 years was 25.88 in. per annum. The mean amount of rain passing in 30 years the chalk percolation gauge at Croydon was 10.87 in. per annum.

TRANSACTIONS
OF
THE CROYDON NATURAL HISTORY AND
SCIENTIFIC SOCIETY.

1907-1908.

26.—FOSSILS FROM THE CHALK, EXPOSED IN A ROAD-TRENCH
NEAR CROHAM HURST, SOUTH CROYDON.

By GEORGE J. HINDE AND FRANK GOSSLING.

IN November and December of last year (1907) a new road* was laid out in an open field between Croham Farm and Croham Hurst. Starting from the farm the road runs in a nearly straight line to the northern corner of the Hurst. At its lower end, near the farm, the surface is 242 ft. above Ordnance Datum ; it gradually rises to about half-way, and then somewhat more steeply to near its termination at the hurst, where the level is 330 ft. above Ordnance Datum. A narrow trench, from 8-12 ft. deep, was made along the road for drainage purposes. In the lower ground, beds of sand and loam, the washings from the Tertiary deposits on the higher levels were exposed ; somewhat higher up the slope the trench passed through chalk, and this continued, with some breaks, to the end of the road. In this upper part also the chalk was capped by beds of greyish sand and reddish loam, in some places about 3-4 ft. in thickness, whilst in others these beds were deeper than the trench, and apparently filled in "pipes" in the chalk.

The chalk from the trench was soft and blocky ; at the upper end of the cutting it contained but a moderate number of generally small flint nodules scattered in the beds, but at the lower end the nodules were larger and more numerous. Fossils are somewhat rare, the forms met with after a careful search are given in the list below :—

SPONGIDA.—*Porosphaera globularis*, Phill. ; *Porosphaera* sp. (encrusting).

ECHINOIDEA.—*Cidaris hirudo*, Sorig. (spine) ; *C. clavigera*, König (spine) ; *C. sceptrifera*, Mant. (spine) ; *Cyphosoma Koenigi*,

* Since named Croham Manor Road.

Mant. (spine); *Echinocorys scutatus* (? *ovatus*) var. *pyramidatus*, Portl.; var. *striatus*, Lam.; *Galerites albogalerus*, Leske; *Micraster cor-anguinum*, Klein.

CRINOIDEA and **ASTEROIDEA**.—*Asteroidea* (marginal plates); *Bourgueticrinus ellipticus*, Miller; *Bourgueticrinus* sp. (nipple-headed); *Marsupites testudinarius*, Schlot; *Uintacrinus* sp.

ANNELIDA.—*Serpula plana*, S. Woodw.; *S. plana*, var.; *S. fluctuata*, S. Woodw.; *S. turbinella*, Sow.

LAMELLIBRANCHIATA.—*Inoceramus* sp.; *Pecten (Janira) quinquecostatus*, Sow.; *Plicatula sigillina*, Woodw.; *Spondylus latus*, Sow.; *S. spinosus*, Sow.

BRYOZOA.—*Actinopora disticha*, v. Hag.; *Berenicea gracilis* ?, Edw.; *B. cf. papyracea*, D'Orb.; *Proboscina radiolitorum*, D'Orb.; *P. anomala*, Reuss.; *Stomatopora granulata*, Edw.; *S. gracilis*, Edw.; *Idmonea cf. alipes*, Greg.; *Spinopora Dixoni*, Lonsd.; *Onychocella* sp.; *Membranipora* sp.

The most important fossils in the above list, from a stratigraphical point of view, are the free Crinoids, *Marsupites testudinarius* and *Uintacrinus*, as they definitely prove that the beds of chalk at this place belong to the "Band of *Uintacrinus*" of Dr. Rowe, which forms the lower part of the *Marsupites*-zone. These fossils, however, were only found in the higher part of the road, *Uintacrinus* plates coming in first on the steep slope above referred to, and *Marsupites* plates still further up the road.

Only detached plates of the calyx of *Marsupites* have been met with in this chalk; for the most part they are nearly smooth on the exterior and also smaller than the thicker and strongly ribbed plates, which also occur here. *Uintacrinus* is represented by the characteristic, internally furrowed, plates of the test, and the small horseshoe-shaped brachial plates. Other fossils distinctive of the *Marsupites*-zone which occur in these beds are the *pyramidatus* variety of *Echinocorys scutatus*, and the nipple-headed species of *Bourgueticrinus*, the former occurring only at the top of the steep rise.

The occurrence of the *Marsupites*-zone of the chalk in this part of Surrey has only lately been recognized. It was first noted in 1904 in a road-cutting at Plough Lane, Beddington, and the list of fossils * from this place comprises nearly all the forms we have met with near Croham Hurst. More recently, † Mr. G. W. Young, F.G.S., has discovered *Uintacrinus* in the large pit at the corner of Coombe Lane and Park Hill Road, South Croydon; in the Coombe Farm Pit, Shirley; and in Ballard's Pit, south side of Addington Hills, where *Marsupites* is also present with it.

* 'Geological Magazine,' Dec. 5, vol. i. 1904, p. 482.

† Proc. Geol. Assoc. vol. xix. Part 4, 1905, p. 201.

27.—REPORT OF THE METEOROLOGICAL COMMITTEE, 1907.

Prepared by the Hon. Sec., FRANCIS CAMPBELL-BAYARD,
F.R. Met. Soc.

(Read February 18th, 1908.)

THE same arrangements, under which the daily rainfall of the district round Croydon has been observed and tabulated, have been continued throughout the year 1907. This year completes the twentieth year of the series, the observations having been commenced on the 1st January 1888, and it is believed that there is no similar publication of the daily values of the rainfall of a district in the United Kingdom.

With reference to 1907, the number of stations in the printed list is one hundred, and there are four additional stations, *viz.* The East Surrey Water Company's Reservoir, Caterham; St. Govans, Beechwood Road, Sanderstead; The East Surrey Water Company's Pumping Station, Purley; and Basing House, Banstead—the records of which are complete and will be found at the end of this Report. Great changes have taken place, and I may add that great losses have been suffered during the year. The old established gauge at Nutwood, Reigate Hill, the records of which commence in June 1869, has come to end owing to the removal of the observer. Through the kindness of the late Mr. H. E. Gurney, and also of Mr. Henry Gurney, the whole of the records of this station are in the hands of your Committee. Mr. Henry Gurney has removed to Outwood where he has established a new station in a district not represented, and I am happy to say that he will send his new record to the Committee for publication. Another old gauge which has come to an end through removal is that of Brimstone Barn, Croydon, the records of which commence in January 1879, and I am happy to say that the whole of the records of this gauge are in the hands of your Committee. Mr. Carter, the engineer of the Croydon Corporation, has in its place established a new gauge at the Laboratory on the Beddington Sewage Farm, and I am happy to say that this new record will come to your Committee for publication. Mr. Scovell left Beckenham early in July, having before his departure recommended me to apply to Mr. Angell, the surveyor of the Urban District Council, who very kindly established a gauge at the Croydon Road Recreation Ground, and has forwarded the observations to myself. These observations have been included in the Printed Returns from August 1st. With reference to

TABLE I.

THE RAINFALL OF 1907 AS COMPARED WITH THE AVERAGE OF THE TEN YEARS 1891-1900.

STATIONS	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Knockholt (F. G.)	-0.90	-0.06	-0.93	+1.82	+0.92	-0.95	-0.09	-0.79	-1.35	+0.17	-1.12	+0.62	-3.56
Dorking*	-1.40	-0.35	-0.93	+2.97	+2.09	+0.14	-9.56	+0.71	-1.74	+2.81	-0.68	+0.53	+3.59
Caterham*	-1.29	-0.00	-0.96	+2.55	+0.82	+0.03	-1.06	+1.78	-1.58	+0.09	-0.95	+0.10	-0.47
Bansfield *	-0.71	-0.37	-1.04	+2.07	+0.38	+0.26	-0.98	-0.33	-1.75	+1.04	-0.89	+0.73	-1.59
Addington Hills	-0.45	-0.31	-0.72	+2.63	+0.29	+0.12	-1.10	+0.01	-1.53	+0.18	-0.39	+0.85	-0.42
Nutfield (O. G.)	-0.92	-0.51	-0.75	+2.25	+0.74	-0.30	-1.03	+0.54	-1.56	+0.62	-0.65	+0.62	-0.95
Sevenoaks *	-1.35	-0.31	-0.71	+1.34	+0.68	-0.36	-1.45	+0.23	-1.91	+0.46	-1.13	-0.02	-4.53
Keston *	-0.45	-0.30	-0.69	+2.13	+0.83	+0.22	-1.22	-0.02	-1.57	+0.59	-0.58	+0.62	-0.44
Forest Hill (W. Wks.)	-0.69	-0.15	-0.30	+2.32	+0.29	+1.10	-1.18	-0.19	-1.04	+0.13	-0.13	+0.33	+0.49
Addington (Pump St.)	-0.88	-0.26	-0.82	+2.38	+0.38	+0.18	-1.13	-0.27	-1.64	+0.19	-0.78	+0.29	-2.36
Abinger (The Hall) ...	-1.42	-0.23	-0.94	+3.71	+1.70	+0.18	-0.85	+0.84	-1.52	+3.18	-0.76	+1.13	+5.02
Redhill *	-1.03	+0.02	-0.76	+2.76	+1.16	+0.01	-0.69	+0.66	-1.59	+0.90	-0.67	+0.86	+1.63
Hayes Common *	-0.23	-0.27	-0.90	+2.06	+0.42	-0.07	-1.29	-0.47	-1.63	+0.25	-0.70	+0.35	-2.48
D'Abernon Chase	-1.05	-0.37	-0.87	+2.42	+0.12	+0.74	-0.81	+0.08	-1.27	+1.43	-0.78	+0.89	+0.53
Leatherhead	-0.93	-0.47	-0.86	+2.81	+0.47	+0.36	-0.40	+0.26	-1.44	+1.60	-0.49	+1.01	+1.92
Sutton (Waterworks) *	-1.08	-0.46	-1.07	+2.14	+0.22	-0.03	-1.33	-0.03	-1.56	+0.38	-0.87	+0.95	-2.74
Forest Hill (Newfield H.)	-0.66	-0.20	-0.50	+2.22	+0.07	+0.92	-1.32	-0.23	-1.15	+0.30	-0.33	+0.44	-0.44
Orpington	-0.22	-0.32	-0.81	+1.81	+0.84	+0.07	-1.50	-0.19	-1.51	-0.12	-0.98	+0.44	-2.56

THE RAINFALL OF 1907 AS COMPARED WITH THE AVERAGE OF THE TEN YEARS 1891-1900 (*contd.*).

STATIONS	Jan.	Feb.	Mar.	April.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.	In.
W. Norwood	-0.77	-0.26	-0.69	+2.24	+0.42	+0.93	-1.26	-0.30	-1.33	-0.02	-0.26	+0.44	-0.86
Nunhead	-0.62	-0.24	-0.44	+2.06	+0.28	+0.79	-0.96	-0.47	-0.31	+0.06	-0.09	+0.05	+0.11
Sidcup *	-0.34	-0.31	-0.57	+1.62	+0.58	+0.55	-0.74	-0.06	-1.34	-0.28	-0.28	+0.22	-0.95
Croydon (Pk. Hill Ho.) *	-0.52	-0.14	-0.74	+2.64	+0.45	+0.30	-1.31	-0.02	-1.26	+0.38	-0.05	+0.88	+0.61
Wimbledon Hill *	-0.64	-0.27	-0.54	+2.29	+0.45	+0.49	-0.83	-0.30	-1.40	+0.22	-0.01	+1.14	+0.60
Greenwich	-0.52	-0.28	-0.60	+1.97	+0.31	+0.78	-1.08	-0.30	-1.12	+0.32	-0.02	+0.58	+0.04
Croydon (Wn. N. Rd.)	-0.53	-0.25	-0.72	+2.48	+0.43	+0.09	-1.40	-0.34	-1.12	+0.30	-0.30	+0.53	-0.83
Wallington	-0.67	-0.17	-0.90	+2.61	+0.45	+0.29	-1.15	+0.02	-1.24	+0.20	-0.69	+0.45	-0.80
S. Norwood *	-0.47	-0.17	-0.64	+2.19	+0.45	+0.07	-1.33	+0.05	-1.14	+0.19	-0.27	+0.40	-0.67
Beddington	-0.65	-0.28	-0.89	+2.37	+0.47	+0.07	-1.25	-0.16	-1.20	+0.12	-0.66	+0.39	-1.67
Richmond *	-1.19	-0.56	-0.70	+1.80	+0.11	+0.66	-0.58	-0.78	-1.29	+0.41	-0.35	+0.99	-1.48
Wimbledon (Sew. Wks.)	-0.85	-0.49	-0.66	+1.86	+0.18	+0.75	-1.08	-0.66	-1.41	-0.07	-0.23	+0.75	-1.91
Raynes Park	-1.04	-0.54	-0.94	+1.84	+0.17	-0.15	-1.12	-0.58	-1.71	-0.14	-0.53	+0.66	-4.08
New Malden	-0.79	-0.20	-0.61	+1.96	+0.20	-0.10	-0.94	-0.26	-1.54	+0.15	-0.07	+0.72	-1.48
Esher	-0.96	-0.19	-0.66	+2.18	+0.14	+0.04	-0.65	-0.11	-1.22	+0.70	-0.31	+0.56	-0.48
Kingston (Sew Works)	-0.99	-0.33	-0.67	+2.17	+0.28	+0.42	-1.19	-0.38	-1.67	+0.71	-0.37	+1.16	-0.86
Surbiton	-0.93	+0.01	-0.70	+2.24	+0.27	-0.16	-0.67	-0.33	-1.45	+0.40	-0.26	+0.83	-0.75
Wilmington	-0.01	-0.13	-0.58	+1.39	+0.93	+0.88	-1.23	-0.01	-1.41	-0.01	-0.36	+0.32	-0.22
Battersea (Waterworks)	-0.72	-0.35	-0.50	+1.56	+0.31	+0.90	-1.00	-0.35	-1.29	-0.26	+0.02	+0.92	-0.76
Deptford	-0.47	-0.20	-0.44	+1.91	+0.23	+0.95	-1.06	-0.32	-0.93	-0.17	+0.04	+0.58	+0.19

the gauge at Sidecup, these observations have for the present ceased, owing to Mr. Sharman leaving the neighbourhood. Efforts have been made to get a new observer, but unfortunately up to the present time they have been unsuccessful.

The death of Mr. Simpson Rostron on November 7th is a great misfortune. His kindly help was most valuable, and his great knowledge was freely imparted to all who desired it. Through the great kindness of his family the gauge has been continued under the charge of Miss Rostron, and there has been no break in the record.

I regret to say that the Sutton District Water Company have again been unfortunate with their rain gauges, their gauge at Burgh Heath having been stolen on Derby Day, the 5th day of June. The gauge was replaced towards the end of July, so that the record commences again on August 1st. This hiatus of two months causes a gap in the record, which it has not at present been thought advisable to fill in by interpolation. It seems difficult to imagine the reason for this wanton theft, when one considers the great bulk and the small value of a rain gauge.

Appendix I. to this Report contains a list of the observers, with particulars relating to the stations and gauges, and also the monthly tables of daily rainfall, of which a sufficient number have from month to month been pulled for the use of the Society. These printed tables contain the records of all observers, with the four exceptions already mentioned, reporting to the Committee. Appendix II. contains a record of all falls of rain of 1·00 in. and upwards, extracted from the Monthly Tables in Appendix I.

The rainfall of 1907 is very peculiar, and in order to show its striking features Table I. has been prepared. This table consists of the records of thirty-eight stations from amongst the forty-eight, whose averages for the ten years 1891–1900 are given in the Meteorological Sub-Committee's report for 1900, the stations for which the records are not the same being marked with a *. When we look at the table, we see that seven months, namely January, February, March, July, August, September and November were dry, and April, May, June, October and December were wet. To descend to particulars. In January a deficiency of rain occurred at every station, and it varied from a maximum of 1·42 in. at Abinger Hall and 1·40 in. at Denbies, Dorking, to 0·01 in. at Wilmington. In February with three exceptions there was again a deficit, but of much smaller amount, varying from 0·56 in. at Richmond, 0·54 in. at Raynes Park, and 0·51 in. at Nutfield, to 0·06 in. at Knockholt. The three exceptions are Caterham, which had the average, Surbiton, which had + 0·01 in., and Redhill, which had + 0·02 in. In March there was also a deficit at every station, varying

from 1.07 in. at Sutton Waterworks to 1.04 in. at Banstead, to 0.30 in. at Forest Hill Waterworks, and 0.44 in. at Nunhead Waterworks and Deptford Waterworks. April was an exceedingly wet month, and there was a very large excess of rain at every station, varying from 3.71 in. at Abinger Hall to 1.34 in. at Sevenoaks and 1.39 in. at Wilmington. This April rainfall was most extraordinary, and if we compare it with the long record at Greenwich commencing in 1815 we find that this year's April record of 3.42 in. has only been exceeded three times, *viz.*—in April, 1829, when it was 4.35 in., in April, 1848, when it was 3.44 in., and in April, 1878, when it was 4.31 in. At Surbiton, where the record commences in 1855, we find this April's record of 3.40 in. has only been exceeded twice, *viz.*—in April, 1858, when it was 3.41 in., and in April, 1878, when it was 3.48 in.; and at Wimbledon, where the record commences in 1854, this year's April record of 3.42 in. has only been exceeded twice, *viz.* in April, 1877, when it was 4.01 in., and in April, 1878, when it was 3.77 in. May, again, was a wet month, but not so much as April. The excess of rainfall varied from 2.09 in. at Dorking to 0.07 in. at Forest Hill (Newfield House), 0.11 in. at Richmond, and 0.12 in. at D'Abernon Chase. June also was a wet month, but less so than May. At eight places the rainfall was below the average. With respect to those above the average the excess varied from 1.10 in. at Forest Hill (Waterworks) to 0.01 in. at Redhill, the deficit from 0.95 in. at Knockholt to 0.03 in. at Sutton (Waterworks). July was a dry month at every station, and the deficit varied from 1.50 in. at Orpington to 0.40 in. at Leatherhead. August was also dry at all but eleven stations, and the deficiency varied from 0.79 in. at Knockholt, and 0.78 in. at Richmond, to 0.01 in. at Wilmington and 0.02 in. at Keston, whilst the excess varied from 1.78 in. at Caterham to 0.01 in. at Addington Hills, and 0.02 in. at Wallington. September was an exceedingly dry month, and with two exceptions no place had a less deficiency than 1.00 in. The deficiency varied from 1.91 in. at Sevenoaks to 0.31 in. at Nunhead, and 0.93 in. at Deptford. In the Greenwich record there are only five Septembers with a smaller value than 0.62 in., the record of the present year, *viz.* 0.46 in. in September, 1832, 0.46 in. in September, 1843, 0.50 in. in September, 1851, 0.16 in. in September, 1865, and 0.30 in. in September, 1898; in the Surbiton record there are only two Septembers with a smaller fall than 0.46 in., the record for 1907, *viz.* 0.35 in. in September, 1865, and 0.43 in. in September, 1898; and in the Wimbledon record only two with a smaller fall than 0.58 in. the fall for September, 1907, *viz.* 0.47 in. in September, 1865, and 0.39 in. in September, 1898. October had an excess of rainfall at all stations except eight, and the excess varied from 3.18 in. at Abinger

Hall and 2·81 in. at Denbies, Dorking, to 0·06 in. at Nunhead and 0·09 in. at Caterham, whilst the deficiency ranged from 0·26 in. at Battersea Waterworks to 0·01 in. at Wilmington. November was a dry month at all stations except Battersea Waterworks and Deptford, which had an excess of 0·02 in. and 0·04 in. respectively, and the deficiency ranged from 1·13 in. at Sevenoaks and 1·12 in. at Knockholt to 0·01 in. at Wimbledon. December was a very wet month at all stations except Sevenoaks, which had a deficiency of 0·02 in., and the excess varied from 1·16 in. at Kingston, 1·14 in. at Wimbledon, and 1·13 in. at Abinger Hall, to 0·05 in. at Nunhead and 0·10 in. at Caterham; it may be mentioned as showing the wetness of the month that there are only sixteen Decembers in the Greenwich record with a larger value than 2·74 in., the fall for 1907, only seven Decembers in the Surbiton record with a larger value than 2·89 in., the fall for 1907, and only four Decembers in the Wimbledon record with a larger value than 3·29 in., the fall for 1907. So far as the individual months go, we may say that the year has had two exceedingly wet months and one exceedingly dry month. With reference to the annual rainfall, this is very varied. We have eleven stations with a rainfall above the average, the excess ranging from 5·02 in. at Abinger Hall and 3·59 in. at Denbies, Dorking, to 0·04 in. at Greenwich, 0·11 in. at Nunhead, and 0·19 in. at Deptford, and twenty-seven stations with a deficiency which ranges from 4·53 in. at Sevenoaks and 4·08 in. at Raynes Park to 0·22 in. at Wilmington. Dr. Mill, in his letter to the *Times* of January 17th, 1908, expressed the opinion that "it was not a wet year, despite the general belief; in fact, the rainfall was very close to the average, and if it tended towards the higher side, the variations from point to point were unusually small." Whatever may be the relation of the rainfall of 1907 to the average of the thirty years 1870–1899, so far as the United Kingdom is concerned, it would appear that the rainfall of the Croydon District is much smaller. If we consider our own district, we find that according to the average we have a deficiency of 25·61 in., a year's rainfall, an amount which of course is made up of the deficiency in the twenty-seven stations after deducting the surplus of the eleven stations, from which we may gather that the year has been rather a dry year, taking it as a whole.

If, however, we look at the year in relation to the number of rainy days, we shall find a reason for the prevalent opinion. To show this, Table II., giving the number of rainy days at Wallington and Greenwich, and comparing it with the average, has been prepared, and in it we see at once that the year's number of days was greatly in excess of the average. With reference to Wallington, the excess of days is twenty-four and the

deficiency of rainfall is 0.80 in., whilst in the case of Greenwich the excess in the number of days is seventeen and the excess in rainfall is 0.04 in. In both we note that the falls of rain must necessarily be small. To go more into detail, we note that both the rainfall and number of days are below the average in January, but that in February the number of days is the average or slightly above, whilst the rainfall is deficient. Every one remembers the glorious Easter weather we had in March, but yet we notice that the number of rainy days at Wallington is the average, but below it at Greenwich, whilst the rainfall was very deficient. The next four months have every one of them a large excess in the number of rainy days, and this is the more surprising as in July there was a great deficiency in rainfall, and I have no doubt gave rise to the popular impression that the year was wet. August had also a large number of rainy days, the average at Wallington, and just slightly below at Greenwich. The splendid weather of September is reflected in the small number of rainy days at Greenwich and at Wallington. October and November have a large number of rainy days, especially in October, when there was an excess of rainfall, whilst there was a smaller excess in November, with a deficiency in rainfall, a condition exactly reversed in December.

TABLE II.

NUMBER OF RAINY DAYS AT WALLINGTON, SURREY.

Average of 10 years	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year.
1891-1900	18	14	13	11	11	11	10	15	12	16	16	17	164
1907	9	14	13	19	18	18	13	15	11	27	17	14	188

NUMBER OF RAINY DAYS AT GREENWICH OBSERVATORY, KENT.

Average of 10 years	Jan.	Feb.	Mar.	Apr.	May	Jun.	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year.
1891-1900	16	12	14	11	12	12	12	15	12	16	15	16	163
1907	10	13	12	18	18	18	14	14	7	23	18	15	180

The number of falls of one inch and upwards given in Appendix II. is nine, but there has been no fall extending over any considerable area. The largest fall is only 1.80 in., and occurred at Caterham on August 17th. Mr. Baldwin Latham, our President, has very kindly informed me that the total number of hours during which rain fell in 1907 was 385.85, which gives the actual number of days of twenty-four hours each as 16.1, and the actual annual rate of fall as .0656 inches per hour.

This compares with 17·8 days and ·0604 in. per hour in 1906, 21·6 days and ·0467 in. per hour in 1905, 24·9 days and ·0377 in. per hour in 1904, and 31·5 days and ·0512 in. per hour in 1903. The least number of hours was in the year 1895, when it was 357·97 hours, giving the actual number of days as 14·5, and the rate of fall as ·0590 in. per hour. These statistics show that in 1907, though the number of days was smaller than in the four years 1906, 1905, 1904, and 1903, the rate of fall was relatively much heavier than in any of those years, and also that it was heavier than in the year 1895, though the number of days in that year was smaller.

In conclusion, the Committee desire to thank those individuals and public bodies, nineteen in number, who have given donations in aid of the rainfall work of the Society, and also the observers, without whose cordial co-operation this organization could not be carried on.

THE RESERVOIR, CATERHAM, SURREY.

Observer—THE EAST SURREY WATER Company. Gauge 5 in. in diameter.

Height of gauge above ground, 1 ft.

Height of station above sea-level, 705 ft.

1907	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
	1·49	1·91	1·12	3·87	2·33	2·27	1·31	2·76	0·60	4·30	2·87	3·42	28·25

ST. GOVANS, BEECHWOOD ROAD, SANDERSTEAD, SURREY.

Observer—E. ALEXANDER. Gauge 5 in. in diameter.

Height of gauge above ground, 10 in.

Height of station above sea-level, 375 ft.

1907	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
	1·14	1·54	0·82	3·63	1·84	1·66	0·78	2·05	0·42	3·54	2·47	3·34	23·23

THE PUMPING STATION, PURLEY, SURREY.

Observer—THE EAST SURREY WATER COMPANY. Gauge 5 in. in diameter.

Height of gauge above ground, 1 ft.

Height of station above sea-level, 215 ft.

1907	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
	1·04	1·51	0·86	3·12	1·97	2·24	1·32	2·40	0·56	4·34	2·72	3·46	25·54

BASING HOUSE, BANSTEAD, SURREY.

Observer—ANDREW PRINGLE. Gauge 8 in. in diameter.

Height of gauge above ground, 1 ft.

Height of station above sea-level, 456 ft.

1907	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
	1·27	1·50	0·50	3·44	1·95	1·91	1·18	2·28	0·52	4·48	2·27	3·46	24·76



APPENDIX II.

FALLS OF 1 INCH AND UPWARDS.

APRIL 6TH.—Holmbury, St. Mary 1·12 in.; Abinger (The Hall) 1·05 in.; Dorking (Denbies) 1·04 in.; Abinger (Rectory) and Leatherhead 1·03 in.; and Epsom 1·02 in.

APRIL 7TH.—Chaldon 1·62 in.; and Hedley 1·31 in.

JUNE 1ST.—Epsom 1·27 in.; Croydon (Park Hill Rise) 1·20 in.; Bromley Common 1·15 in.; Kew (Kew Gardens Road) 1·02 in.; and Kew (Cumberland Gate) 1·01 in.

JUNE 29TH.—Clapham Park 1·37 in.; Battersea Park and Deptford 1·33 in.; Forest Hill (Honor Oak Road) 1·20 in.; Camberwell (Town Hall) 1·18 in.; Telegraph Hill 1·14 in.; Wilmington and Brockwell Park 1·12 in.; Forest Hill (Dartmouth Road) 1·08 in.; Nunhead 1·05 in.; Greenwich 1·03 in.; and Sidcup 1·00 in.

AUGUST 17TH.—Caterham 1·80 in.; Nutfield (old gauge) 1·05 in.; Chaldon, and Westerham (Town) 1·02 in.; Redhill, Buckland, and D'Abernon Chase 1·00 in.

SEPTEMBER 30TH.—Telegraph Hill 1·60 in.

OCTOBER 17TH.—Holmbury St. Mary 1·29 in.; Abinger (The Hall) 1·27 in.; and Abinger (Rectory) 1·21 in.

NOVEMBER 26TH.—Knockholt (field gauge) 1·01 in.

DECEMBER 11TH.—Abinger (The Hall) 1·09 in.

APPENDIX I.

CROYDON NATURAL HISTORY AND SCIENTIFIC SOCIETY (*Meteorological Committee.*)

STATIONS.	OBSERVERS.	Size of Gauge.	Height above Ground.			Height of Sta. ab. Sea-level.
			IN.	FT.	IN.	
Holmbury St. Mary (Ioldwynds)	F. Cornish	5	1	0	530	
Abinger (The Rectory).....	Miss Brodie-Hall.....	5	1	0	381	
Abinger (The Hall)	The Lord Farrer	8	2	0	320	
Dorking (Denbies).....	J. Beesley	5	0	6	610	
Betchworth (The Holmes)	F. R. Rushton	5	0	8	322	
Redhill (Linkfield Lane)	Miss M. E. Janvrin	5	1	0	325	
Nutfield (The Priory, old gauge).....	J. Moffatt	8	1	2	468	
Nutfield (The Priory, new gauge).....	J. Moffatt	8	1	2	331	
South Nutfield (Hale Edge)	R. C. Grant	5	1	0	270	
Buckland (Hartswood)	R. W. Clutton	5	1	0	174	
Reigate Hill (Nutwood Lodge).....	H. Gurney	5	1	0	440	
Upper Gatton (The Park).....	F. Druce	5	1	0	600	
Merstham (Rockshaw Lodge).....	T. W. Hill	5	1	0	475	
Chipstead (Shabden Park)	J. Crerar	5	1	0	550	
Chaldon (The Rectory)	Rev. G. E. Belcher	5	1	0	542	
Caterham (Metropolitan Asylum)	P. E. Campbell, M.D.	5	1	0	610	
Westerham (Hill Estate).....	W. Morris	5	1	0	539	
Westerham (The Town)	W. Morris	5	1	0	380	
Knockholt Beeches (Field Gauge)	W. Morris	5	1	0	785	
Knockholt Beeches (Tower Gauge)	W. Morris	5	24	6	812	
Chevening (The Park).....	C. Sutton	5	1	0	360	
Sevenoaks (St. John's Hill)	W. W. Wagstaffe	5	1	10	404	
Chelsham (Fairchildes)	A. S. Daniell	8	1	0	600	
Warlingham (Egremont).....	H. Rogers	5	1	0	614	
Kenley (Hazelea)	Mrs. Carr-Dyer	5	1	0	282	
Kenley (Place Fell)	J. V. Brett	5	1	0	300	
Sanderstead (The Red House)	Capt. Carpenter, R.N.	5	1	0	320	
Purley (Riddlesdown Road)	J. E. Clark	5	1	0	360	
Burgh Heath (The Reservoir).....	Sutton Dis. Water Co.	8	1	0	580	
Walton-on-the-Hill (Shirley)	E. P. Hawthorn	5	0	6	560	
Hedley (The Hurst)	Mrs. Lyall	5	1	3	450	
Leatherhead (Downside)	A. Tate	5	1	0	250	
D'Abernon Chase	Sir W. Vincent, Bart.	5	1	0	280	
Epsom (Ashley Road)	S. C. Russell	5	1	0	160	
Banstead (The Hall)	Mrs. Maitland	8	1	0	480	
Sutton (Carshalton Road)	Sutton Dis. Water Co.	5	1	0	110	
Sutton (Sewage Works)	C. Chambers Smith..	8	1	0	94	
Benhilton (Angel Hill)	J. C. M. Stanton	5	1	3	125	
Carshalton (Sewage Works)	W. W. Gale	5	1	0	118	
Wallington (Maldon Road)	F. Campbell-Bayard	5	4	1	140	
Beddington (Riverside)	S. Rostron	5	1	0	120	
Croydon (Brimstone Barn)	Croydon Corporation	5	1	0	130	
Croydon (Waddon New Road).....	Croydon Corporation	5	1	0	146	
Croydon (Woburn Road)	A. Malden	5	1	6	183	
Croydon (Park Hill Rise)	H. F. Parsons, M.D.	5	1	0	250	
Croydon (Park Hill House)	Baldwin Latham	8	1	0	265	
Croydon (Bramley Hill)	H. R. Wise	5	1	0	198	
Croydon (Avondale Road)	Dr. G. J. Hinde	5	1	0	225	

STATIONS.	OBSERVERS.	IN.	FT.	IN.	Size of Gauge.	Height above Ground.	Height of Sta. ab. Sea-level.
Addington Hills (The Reservoir)	Croydon Corporation	8	0	9	473		
Addington (Pumping Station)	Croydon Corporation	8	1	0	331		
West Wickham (Wickham Court)	Sir H. F. Lennard, Bt.	5	1	2	300		
Hayes (Hayes Place)	J. Grandfield	8	1	0	350		
Keston (Forest Lodge)	W. H. Dodgson	5	1	0	300		
Orpington (Waterworks)	W. Morris	5	1	0	220		
Southfleet (Waterworks)	W. Morris	5	1	0	82		
Chislehurst (Hawkwood)	Miss M. C. Edmann	5	1	0	300		
Bromley (The Palace)	Coles Child	5	1	0	187		
Bromley Common (Elmfield)	Rev. J. P. Faunthorpe	5	0	9	240		
Beckenham (Wickham Road)	E. Scovell	5	1	2	155		
Anerley (The Town Hall)	H. W. Longdin	5	40	0	191		
South Norwood (Woodvale)	E. Dean	5	1	0	216		
Beddington Corner (Millgreen Rd.)	G. Miller	5	5	0	77		
Wimbledon (Sewage Works)	C. H. Cooper	5	1	0	58		
Wimbledon (The Downs)	Francis Fox	5	1	0	162		
Raynes Park (Pumping Station)	C. H. Cooper	5	1	0	47		
New Malden (Sewage Works)	T. V. H. Davison	5	1	0	45		
Worcester Park (Manor Lodge)	F. D. Outram	5	1	9	120		
Esher (Sewage Works)	A. J. Henderson	5	1	0	40		
West Molesey (The Waterworks)	H. E. H. Wrinch	5	1	0	32		
Surbiton (The Waterworks)	H. E. H. Wrinch	5	0	6	25		
Kingston (Sewage Works)	T. Stevens	5	1	0	25		
Kingston (County Hall)	E. Underwood	5	0	9	31		
Richmond (The Terrace)	J. H. Brierley	8	1	6	109		
Kew (Kew Gardens Road)	Lionel Burrell, M.D.	5	1	2	23		
Kew (Cumberland Gate)	R. C. Peirce	5	1	5	22		
Putney Heath (The Reservoirs)	H. E. H. Wrinch	5	1	0	180		
Wandsworth Com. (Patten Road)	F. J. Brodie	5	1	0	100		
Streatham (Conyers Rd. Waterw.)	J. W. Restler	5	4	1	110		
West Norwood (Thornlaw Road)	W. Marriott	5	1	0	220		
Up. Norwood (Dulwich-wood Park)	H. V. Caldicott	5	1	2	276		
Forest Hill (Dartmouth Road)	L. W. F. Behrens	5	1	0	220		
Forest Hill (Honor Oak Road)	J. W. Restler	5	1	0	344		
Forest Hill (Camberwell Cemetery)	W. Oxtoby	5	2	2	160		
Sidcup (Park Road)	S. A. Sharman	5	1	0	230		
Wilmington (The Waterworks)	W. Morris	5	1	0	25		
Dartford (West Hill House)	Lieut-Col. C. N. Kidd	5	1	3	100		
Eltham (High Street)	W. Morris	5	1	0	245		
Nunhead (Linden Grove)	J. W. Restler	5	4	0	176		
East Dulwich (Grove Vale Depot)	W. Oxtoby	8	2	2	58		
Brockwell Park	Lond. County Council	8	1	0	140		
Clapham Park (Atkins Road)	D. W. Horner	5	1	3	128		
Battersea Park	Lond. County Council	5	9	6	12		
Battersea (Waterworks)	J. W. Restler	5	3	0	21		
Camberwell (The Green)	W. Oxtoby	8	2	2	17		
Camberwell (Town Hall)	W. Oxtoby	8	49	0	21		
Camberwell (Leyton Square)	W. Oxtoby	8	2	2	14		
Telegraph Hill	Lond. County Council	5	8	6	135		
Greenwich (Royal Observatory)	Astronomer Royal	8	0	5	155		
Deptford (Waterworks)	W. Morris	5	1	0	20		
Southwark Park	Lond. County Council	5	10	0	9		

Note.—The observations are taken at 9 a.m., except at Kingston (County Hall) and Streatham (7.30 a.m.), Reigate Hill and Purley (8 a.m.), and Sevenoaks, Clapham Park, Battersea Park, and Southwark Park (10 a.m.).

Day of Mo.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1-21	1-18	1-11	1-02						
Holmbury St. Mary	.64	.52	.48	.44	.40	.36	.32	.28	.26	.24	.22	.20	.18	.16	.14	.12	.10	.09	.08	.07	.06	.05	.04	.03	.02	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
Abingdon (Bretory)	.48	.52	.55	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56					
Abingdon (The Hall)	.48	.52	.55	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56	.56					
Dorking (Denbies)	.55	.52	.48	.44	.40	.36	.32	.28	.26	.24	.22	.20	.18	.16	.14	.12	.10	.09	.08	.07	.06	.05	.04	.03	.02	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Bethworth	.56	.52	.48	.44	.40	.36	.32	.28	.26	.24	.22	.20	.18	.16	.14	.12	.10	.09	.08	.07	.06	.05	.04	.03	.02	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Redhill	.76	.72	.68	.64	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Nutfield (old Gauge)	.62	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Nutfield (new Gauge)	.62	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Buckland	.64	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Chipping	.65	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Caterham	.64	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Westerham	.72	.67	.63	.59	.55	.51	.47	.43	.39	.35	.31	.27	.23	.19	.15	.11	.07	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Wittling	.75	.72	.68	.64	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Knockholt (Field gauge)	.75	.72	.68	.64	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Knockholt (Towns)	.75	.72	.68	.64	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Knockholt (Power gas.)	.75	.72	.68	.64	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Knockholt (Power gas.)	.75	.72	.68	.64	.60	.56	.52	.48	.44	.40	.36	.32	.28	.24	.20	.16	.12	.08	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Sevenoaks	.66	.62	.58	.54	.50	.46	.42	.38	.34	.30	.26	.22	.18	.14	.10	.06	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Cheriton	.74	.70	.66	.62	.58	.54	.50	.46	.42	.38	.34	.30	.26	.22	.18	.14	.10	.06	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Kentley	.55	.51	.47	.43	.39	.35	.31	.27	.23	.19	.15	.11	.07	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Wartling	.55	.51	.47	.43	.39	.35	.31	.27	.23	.19	.15	.11	.07	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
Chelsham

MONTHLY GAUGE.

* The figures in this row give the totals for the month.

† The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for January is 1.81 ins.
January, 1907.

* The figures in this row give the totals for the month. † The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for January is 1.81 ins.

January, 1907.

	Day of Mo.	Wandswoth.	Commonw.	Stereatham	West Norwood	PPer Norwood	Dorwood	Forest Hill (Dartford rd.)	Forest Hill (Horn-O.-ld.)	Forest Hill (Cemetary)	Eltham	Munhead	East Dulwich	Brockwell Park	Olapham Park	Battersea Park	Cambie's Well (Waterwk.)	Cambie's Well (Theatre)	Telgravehill	Greenwich	Deptford Park	Southwark Park		
1	.38	.02	.04	.06	.01	.01	.02	.07	.08	.01	.12	.11	.46	.39	.59	.37	.31	.29	.05	.04	.26	.52	.57	.36
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+ The totals from January 1st.

* May - Oct. 1815-1904; Nov. - April 1815-1904.

NOTES.

JANUARY, 1907.

THE month, but for the heavy rain on the 1st, would have been a dry one. It opened mild and stormy, and then became wintry on the 18th, and so continued till the end. Snow fell in most parts of the district on the 23rd, 24th, and 31st. A pink glow over the sky at sunset was observed at Croydon on the 1st. On the 2nd there was hail at Sanderstead soon after noon, and lightning was seen at Epsom on the same day. On the 20th, at West Norwood, the rain was amber-coloured. A solar halo with parhelia was seen at Upper Gatton on the 4th, and solar haloes at Epsom on the 6th, 7th, and 28th. Lunar haloes were seen at Greenwich on the 2nd, at Epsom on the 2nd, 7th, and 29th, and at Upper Gatton on the 27th. The observer at West Wickham mentions the excellent condition of the fruit-buds; whilst the observer at Nutfield laments the injury done to so-called hardy plants by the frosts of the 23rd to the 26th. The observer at Sanderstead mentions that there was four days' skating, commencing with the 24th. There was a faint aurora seen at Epsom between 9 and 9.30 p.m. on the 10th. The month has been very unhealthy. The death-rate has been high, influenza very prevalent, and there have also been somewhat numerous cases of diphtheria, scarlet fever, and measles in different parts of the district. The rainfall is about three-quarters of an inch below the average. The mean temperature is about the average, and was at Wallington 38°·2, at Croydon (Park Hill House) 38°·1, at Worcester Park 38°·0, at Chipstead 37°·4, at Warlingham 37°·3, and at Epsom 37°·2. There were recorded at Wallington 39·2 hours of sunlight, which is 6·7 hours or two per cent. below the January average of the twenty years 1886-1905.

FRANCIS CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

NOTES.

FEBRUARY, 1907.

THE month has been cold, both during the day and night, and also somewhat dry and sunless. All vegetation, owing to the cold, is late. The month has been very unhealthy, colds, influenza, and measles being prevalent, and there are isolated cases of scarlet fever and diphtheria in many parts. The winter aconite flowered at Croydon on the 14th, and the snowdrop on the 13th, over a month later than last year; whilst the first primroses were not picked at Nutfield till the 26th. At Nutfield the rooks began to build on the 16th. Snow fell in most parts of the district on the 1st, 3rd, 4th, 12th, and 21st; the latter fall lasting about an hour, between 8.15 and 9.15 a.m., with remarkably large flakes. There was a very thick mist throughout most parts of the district on the 28th. Sheet lightning was seen at Epsom on the 19th and 21st. Solar halos were seen at Epsom on the 6th, 10th, 14th, 16th, and 19th, at Greenwich on the 10th, 19th, and 28th, and at Upper Gatton on the 6th; whilst lunar haloes were observed at Epsom on the 16th and 28th—the latter being observed at nearly every place in the district. The rainfall for the month is slightly below the average. The mean temperature of the month is between $2^{\circ}5$ and $1^{\circ}5$ below the average, and was at Croydon (Park Hill House) and Wallington $37^{\circ}2$, at Worcester Park $36^{\circ}8$, at Epsom $36^{\circ}0$, and at Warlingham $35^{\circ}6$. There were recorded at Wallington 55.8 hours of sunlight, which is 8.1 hours or three per cent. below the February average of the twenty years 1886-1905.

FRANCIS CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

Daily Rainfall. The 90 years (1815-1904) average at Greenwich for January is 1.00 inches.

Day of Mo.		Holmbury St. Mary		Abinger (Reetotry)		Abinger (The Hall)		Dorking (Denbries)		Redhill		South Nutfield (Old Gauge)		South Nutfield (New Gauge)		Betchworth		Redhill		Bridgetown		Merstham		Catherham		Westham (Hill Est.)		Westham (Towyn)		Knockholt (Hele gau.)		Knockholt (Hele gau.)		Chevening Park		Evenhams		Worlingham		Kenley (Hezelley)					
1	2	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
2	3	2.89		2.92		3.02		2.94		2.59		3.38		2.51		2.66		2.98		3.19		3.11		3.08		3.47		3.27		2.84		3.02		2.97		3.60		2.74							
3	4	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
4	5	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
5	6	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
6	7	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
7	8	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
8	9	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
9	10	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
10	11	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
11	12	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
12	13	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
13	14	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
14	15	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
15	16	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
16	17	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
17	18	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
18	19	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70		1.97		1.85		2.11		1.68		1.49		1.51		1.94		1.70		2.17	
19	20	1.68		1.74		2.00		1.83		1.91		1.99		1.31		1.46		1.36		1.48		1.83		2.01		1.70																			

* The figures in this row give the totals for the month. † The totals from January 1st

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for February is 1.53 ins.

February, 1907.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for February is 1.53 ins.

February, 1904.

Day of Mo.	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Anerley	South Norwood	Beddington Corner	Wimbledon (Sew. Wks.)	Wimbledon (The Downs)	Wimbledon (Sew. Wks.)	Kingston (County H.)	Kew (Kew Grd.)	Kew (Cumb. G.)	
1	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
2	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
3	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
4	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
5	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
6	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
7	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
8	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
9	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
10	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
11	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
12	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
13	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
14	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
15	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
16	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
17	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
18	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
19	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
20	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
21	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
22	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
23	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
24	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
25	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
26	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
27	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
28	.08	.10	.09	.10	.07	.07	.07	.06	.01	.01	.01	.02	.03	.02	.01	.01	.01	
*	1.53	1.47	1.40	1.17	1.31	1.45	1.37	1.46	1.39	1.43	1.44	1.44	1.46	1.44	1.31	1.21	1.10	
†	3.24	3.22	2.79	2.94	2.34	2.62	2.76	2.86	2.70	2.32	2.56	2.42	1.71	2.36	2.09	1.75	2.12	2.14

* The figures in this row give the totals for the month.

† The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for February is 1.53 ins.

February, 1907.

Day of Mo.	Pultney Wharf	West Norwood	Upper Norwood	Norwood	Treatham Common	Wandsworth	Southwark	Deptford	Greenwich Hill	Camberwell	Camberwell (The Green)	Camberwell (Low Ha.)	Camberwell Well	Deptford	Southwark Park	
1	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
2	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
3	.04	.05	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
4	.05	.05	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
5	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
6	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
7	.05	.05	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
8	.05	.05	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
9	.12	.12	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09
10	.32	.38	.26	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
11	.05	.06	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07
12	.24	.28	.38	.39	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41
13	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
14	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
15	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
16	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
17	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
18	.02	.03	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
19	.23	.21	.34	.39	.44	.38	.31	.28	.40	.43	.49	.40	.46	.40	.46	.46
20	.04	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
21	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
22	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
23	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
24	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
25	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
26	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
27	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
28	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
*	1.21	1.21	1.22	1.42	1.50	1.39	1.28	.87	1.40	1.28	1.48	1.32	.97	1.06	1.37	1.47
†	1.98	1.97	2.05	2.34	2.30	2.37	2.21	1.64	2.72	2.62	2.65	2.23	1.59	1.67	2.35	2.15

* The figures in this row give the totals for the month.

† The totals from January 1st.

March, 1907.

The 90 years (1815-1904) average at Greenwich for March is 1.51 ins.

* The figures in this row give the totals for the month. + The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for March is 1.51 ins.

March, 1907.

Day of Mo.	Kenley (Place Field)	Sandretti (Sandretti Field)	Purley	Brentford Heath	Waltham-on-the-Hill	Hatton-on-the-Hill	Brenton	Heathfield	Banstead	Brutton	Croydon (W.M.Rd.)	Brondesbury	W.M.N.Rd.	Croydon (P.K.H.Ho.)	Croydon (Park H.B.)	Croydon (Wood Rd.)	Croydon (Wm. N.Rd.)	Croydon (P.K.H.Ho.)	Croydon (Bram. H.)	Croydon (Aveord Rd.)	Croydon (Addington Rd.)	Croydon (Hills Addington)	Admiralty Pump St.)		
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* The figures in this row give the totals for the month.

† The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for March is 1.51 ins.

March, 1907.

Day of Mo.	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Anerley	Southwood	Beddington	Wimbledon	Wimbledon	The Pavilions	Park Lane	Finsbury	Molesley	Surrey	County H.	Kingtonstoun	Richmond	Kew (Gard.)	Kew (Cumb. G.)
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*	.93	.90	1.03	.83	.76	.80	.91	.87	.96	.79	.86	.80	.72	.91	.82	.67	.73	.66	.75	.74	.85	.81	.97
†	4.17	4.12	3.82	3.77	3.10	3.42	3.67	3.73	3.66	3.11	3.42	3.22	2.43	3.27	2.91	2.42	2.85	2.55	2.50	2.91	2.97	2.99	2.92

* The figures in this row give the totals for the month.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for March is 1.51 ins.

March, 1907.

Day of Mo.	Day of Year	West	Northwood	Upper Wood	Dartford	Eltham	Kenhead	East Dulwich	Clapham Park	Battersea Park	Waterloo (Well)	Camborne Well	Telgegraph Hill	Greenwich	Deptford	Southwark	Park
1	1	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
2	2	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
3	3	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
4	4	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04
5	5	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05
6	6	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06
7	7	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07
8	8	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
9	9	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09
10	10	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
11	11	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
12	12	.20	.18	.17	.17	.18	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19
13	13	.03	.04	.03	.02	.05	.04	.05	.04	.05	.04	.05	.04	.04	.04	.04	.04
14	14	.03	.02	.02	.03	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04
15	15	.09	.12	.05	.08	.08	.08	.09	.10	.06	.05	.05	.05	.05	.05	.05	.05
16	16	.06	.05	.06	.08	.07	.07	.07	.09	.06	.05	.05	.05	.05	.05	.05	.05
17	17	.03	.03	.01	.02	.03	.03	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02
18	18	.07	.05	.06	.08	.07	.08	.07	.08	.05	.07	.02	.02	.02	.02	.02	.02
19	19	.07	.05	.05	.06	.08	.07	.08	.07	.08	.05	.07	.05	.04	.04	.04	.04
20	20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
+ 2.85	+ 2.90	2.77	3.23	3.27	3.39	3.41	3.41	3.50	3.01	2.26	2.34	3.32	2.56	3.07	1.97	1.99	2.34

* The figures in this row give the totals for the month.

† The totals from January last.

NOTES.

M A R C H , 1 9 0 7 .

THE month has been a remarkable one, being characterized by warm days and cold nights, with the result that very little plant growth took place. It has, on the whole, been a healthy one, except for influenza and colds, though in some few places there have been several cases of diphtheria and scarlet fever. Fogs have been rather prevalent in the early mornings, and there have been numerous hoar frosts. At Wallington, the mean barometer reduced to sea-level, 30·185 in. was the highest for March in the record; and with the exception of March, 1893, the shade maximum 53°·9, the sunlight 189·4 hours, and the sunlight (possible duration) 51 per cent. were the highest, and the amount of cloud 5·0, and the relative humidity 79 per cent. the lowest. The maximum shade temperature took place on the 30th or 31st, and was in many cases over 70°. Snow fell throughout the district on the 11th. Solar haloes were observed at Greenwich on the 1st and 25th, at Upper Gatton on the 5th and 12th, and at Epsom on the 1st, 9th, 10th, and 12th; and a lunar halo was seen at Beddington on the 20th, and at Greenwich, Upper Gatton, and Epsom on the 21st. Sheet lightning was observed at Epsom on the 8th and 14th, and hail at Upper Gatton on the 8th. A brimstone butterfly was seen at Epsom on the 1st, at Abinger on the 23rd, at Sanderstead on the 29th, and at Wallington on the 30th; two red admiral butterflies were seen at Epsom on the 27th; a cabbage white butterfly at Sanderstead on the 29th, Benhilton on the 30th, and Epsom on the 31st; a tortoiseshell at Sanderstead on the 29th; and a peacock one at Abinger on the 23rd, and Wallington on the 29th; honey bees were seen at Epsom on the 1st, and at Wallington on the 18th; ladybird at Epsom on the 2nd, and Wallington on the 25th; and bats were observed at Epsom on the 21st. The peach blossomed at Epsom on the 21st, and at Banstead on the 25th; the almond at Kew on the 23rd, and at Epsom, Wallington, and Beddington on the 26th; the apricot at Epsom, and the *Cydonia japonica* at Kew on the 26th; and the nectarine at Epsom on the 27th. The month's rainfall is a little over half the average quantity. The mean temperature of the month is about 2°·3 above the average, and was at Croydon (Park Hill House) 44°·4, at Wallington 44°·3, at Worcester Park 44°·2, at Warlingham 43°·7, and at Epsom 43°·6. There were recorded at Wallington 189·4 hours of sunlight, which is 74 hours or twenty per cent. above the March average of the twenty years 1886-1905.

FRANCIS CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

NOTES.

APRIL, 1907.

THE month has been exceedingly wet, with an average temperature, and somewhat sunless. The rainfall in many places exceeded the total of the previous three months, and has not been exceeded since April, 1889, at Greenwich; at Croydon, Wimbledon, and Surbiton since April, 1878; and at Nutfield since April, 1877. There was a heavy snowstorm in the early morning of the 7th, the amount being of course credited to the 6th, throughout the district, and the depth varied from about eight inches at Betchworth to about one inch at Croydon. The snow was remarkable for the size of the flakes, and for its exceedingly wet character. Thunder was heard and lightning seen generally throughout the district on the 10th, and also at Nutfield on the 9th and 11th, at Abinger and Upper Gatton on the 11th, and at Epsom on the 6th, 11th, and 17th; and lightning alone was seen at Nutfield on the 30th. Hail occurred at Greenwich on the 10th, at Upper Gatton on the 6th, 17th, and 30th, at Nutfield on the 9th and 30th, at Epsom on the 6th and 7th, and at Sanderstead on the 6th. A rainbow was seen at Epsom and Upper Gatton on the 6th. Solar haloes were seen at Epsom on the 4th, 6th, 20th, and 22nd, and at Greenwich on the 4th, 20th, and 22nd; and lunar haloes at Epsom on the 3rd, 20th, and 22nd. The cuckoo was heard at Epsom on the 5th, at Bromley on the 7th, at Sanderstead on the 11th, at Nutfield on the 12th, at Abinger on the 18th, at Upper Gatton on the 22nd, and at Banstead on the 23rd. The nightingale was heard at Abinger on the 20th, and at Banstead on the 24th. The swallow was seen at Bromley on the 13th, at Epsom on the 21st, and at Nutfield on the 23rd; and fully-fledged blackbirds were seen at the latter place on the 13th. The plum blossomed at Wallington on the 1st, at Kew on the 5th, and at Epsom on the 13th; the pear at Wallington and Kew on the 13th, and at Epsom on the 21st; the apple at Kew on the 23rd, and at Wallington on the 28th; the hornbeam at Wallington on the 5th; the blackthorn at Epsom on the 21st; and the laurel at Epsom on the 25th. At Wallington a wasp was seen on the 6th, a humble-bee on the 14th, and a small white butterfly on the 24th. At Bromley the first asparagus outside was cut on the 28th, five days later than the latest date since 1898. At West Norwood the rainfall on the 10th was of a dull smoky tint, the result of falling through the gloom. The mean temperature of the month was about the average, and was at Croydon (Park Hill House) $47^{\circ}7$, at Wallington $47^{\circ}2$, at Worcester Park $47^{\circ}1$, at Epsom $46^{\circ}7$, and at Warlingham $45^{\circ}6$. There were recorded at Wallington 120.7 hours of sunlight, which is 86.9 hours or eight per cent. below the April average of the twenty years 1886-1905. The month, as a whole, has been a healthy one.

FRANCIS CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

The 90 years (1815-1904) average at Greenwich for April is 1.60 ms.

* The figures in this row give the totals for the month. † The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for April is 160 ins.

April, 1907.

Day of Mo.	Kenley (Place Fell)	Sanderstead	Bromley	Heath	Wutton-on-the-Hill	Hatch	Orpington	Eltham	Deptford	Blackheath	Leechmere	Denham	Staines	Chase	Banstead	Sutton (Waterwkr.)	Benthillton	Carslhalton	Guildford (Wm. N.r.d.)	Guildford (Pkr. H.o.)	Guildford (Bram. H.)	Guildford (Addrgd rd.)	Guildford (Hills)	Guildford (Addrgd St.)	Pump. St.)	
	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
1	.05	.06	.05	.06	.06	.06	.08	.07	.04	.04	.06	.03	.05	.04	.04	.04	.04	.04	.04	.04	.05	.05	.06	.08	.10	
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*	3.66	3.51	3.46	3.90	3.73	6.03	3.95	3.62	3.75	3.46	3.31	3.54	3.45	3.45	3.86	3.57	3.64	3.32	3.44	3.82	3.88	3.80	3.82	3.68		
†	7.47	6.86	7.12	7.66	7.15	9.66	7.13	6.57	7.35	7.50	6.08	6.48	6.00	6.42	7.34	7.03	7.34	6.58	6.73	7.71	7.60	7.96	7.68	7.45		

* The figures in this row give the totals for the month.

† The totals from January 1st.

RECORD CESSADE.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for April is 1.60 ins.

April, 1907.

Day of Mo.	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley Common	Southwood	Beddington	New Malden	Wimbledon (Sewer, Wrs.)	Kingsdown (Sewer, Wks.)	County H. (Kingsdown)	Richmond	Kew G. rd.	Kew G. (Cumb. G.)
1	.09	.10	.05	.01	.03	.06	.06	.08	.04	.08	.05	.01	.01	.02	.04	.05	.01
2	.09	.10	.05	.01	.03	.06	.06	.08	.04	.08	.05	.01	.01	.02	.04	.05	.01
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	.08	.11	.13	.11	.03	.06	.06	.07	.04	.05	.05	.04	.04	.05	.04	.05	.05
5	.08	.11	.13	.11	.03	.06	.06	.07	.04	.05	.05	.04	.04	.05	.04	.05	.05
6	.74	.55	.53	.39	.35	.44	.36	.40	.47	.36	.44	.43	.41	.45	.46	.45	.62
7	.7	.53	.39	.18	.17	.24	.14	.01	.02	.07	.02	.14	.02	.01	.04	.45	.37
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	.45	.45	.13	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12	.36	.32	.39	.32	.30	.29	.02	.30	.28	.29	.22	.22	.21	.19	.16	.15	.24
13	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14	.02	..	..	.03	.04	.01	.02	.02	.03	.02	.01	.02	.01	.01	..	..	..
15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
16	.06	.07	.06	.06	.06	.10	.09	.08	.07	.04	.05	.02	.03	.01	..	..	..
17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
20	.06	.08	.06	.07	.04	.06	.04	.08	.07	.09	.11	.10	.08	.12	.11	.10	.13
21	.22	.20	.21	.19	.17	.22	.24	.20	.22	.18	.25	.21	.20	.24	.21	.23	.22
22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	.16	.14	.10	.11	.08	.12	.14	.20	.17	.14	.22	.22	.25	.30	.27	.32	.37
26	.36	.33	.41	.34	.33	.37	.33	.34	.31	.30	.32	.31	.30	.34	.31	.37	.36
27	.06	.04	.04	.05	.02	.03	.03	.04	.05	.03	.05	.04	.06	.07	.05	.07	.40
28	.10	.09	.10	.09	.10	.08	.09	.10	.16	.10	.13	.14	.12	.10	.14	.13	.37
29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30	.29	.24	.23	.25	.25	.23	.24	.24	.24	.29	.26	.26	.24	.29	.25	.27	.15
*	3.39	3.32	2.97	2.98	2.77	3.17	2.59	3.12	3.55	3.00	3.42	3.12	3.01	3.32	3.25	3.40	.21
†	8.06	7.51	7.14	6.74	6.01	6.51	6.50	6.83	6.09	6.74	6.80	5.43	6.69	6.03	5.43	6.17	6.14

* The figures in this row give the totals for the month.

+ The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for April is 1.60 ins.

April, 1907.

Day of Mo.	Wadsworth	Common	Treattham	West Norwood	NCP Norwood	Forest Hill (Horn-O.-std.)	Forest Hill (Dartm.-std.)	Sidcup	Whittington	Eltham	Munhead	East Dulwich	Battersea Park	Camberwell (Theatre)	Faversham (Town Hall)	Cambridge Well	Cambridge Well (Theatre Green)	Hill Top (Faversham)	Greenwicheh	Deptford Park	Southwark Park	
1	.03	.01	.02	.04	.04	.04	.04	.04	.04	.01	.03	.02	.01	.01	.01	.01	.01	.01	.01	.02	.02	.02
2	..	.01	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
*	3.31	3.30	3.19	3.47	3.53	3.41	3.45	2.87	2.87	2.45	2.76	2.89	3.01	2.10	4.06	3.88	3.28	2.50	2.32	2.31	3.45	3.00
†	6.16	6.20	5.96	6.70	6.80	6.76	5.28	6.59	5.86	6.26	5.90	5.27	4.44	7.38	6.44	6.35	4.47	4.31	3.93	4.31	6.74	5.27

* The figures in this row give the totals for the month.

+ The totals from January 1st.

* The figures in this row give the totals for the month.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for May is 1.95 ins.

May, 1907.

Day of Mo.	Kenley (Place Fell)	Sanderstead (Place Fell)	Purley	Brentford Heath	Waltham-on-the-Hill	Hedley	Barnstaple	Sutton (Watervwk.)	Wallingtoon (Wm. N.rd.)	Croydon (Bram. H.)	Croydon (Park H., R.)	Croydon (Wood Rd.)	Croydon (Brim. Br.)	Croydon (Avond Rd.)	Croydon (Hills)	Addington St.)	Furness, St.)
1	.20	.02	.03	.20	.06	.02	.22	.04	.05	.19	.13	.08	.02	.02	.02	.02	.19
2	.19	.10	.12	.09	.07	.08	.20	.04	.05	.11	.08	.10	.09	.09	.09	.11	.23
3	.24	.03	.03	.06	.01	.07	.23	.04	.05	.11	.02	.02	.02	.02	.02	.04	.03
4	.01	.01	.01	.01	.01	.01	.02	.02	.02	.01	.01	.01	.01	.01	.01	.01	.12
5	.03	.01	.01	.02	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
6	.27	.35	.32	.39	.32	.32	.24	.30	.36	.31	.31	.28	.24	.31	.33	.38	.43
7	.37	.32	.33	.32	.32	.31	.27	.35	.33	.31	.30	.30	.30	.29	.30	.34	.33
8	.35	.29	.32	.33	.27	.31	.35	.35	.36	.31	.30	.30	.30	.30	.30	.32	.22
9	.03	.03	.08	.05	.08	.05	.06	.04	.04	.03	.03	.03	.03	.02	.02	.02	.01
10	.01	.01	.03	.03	.03	.03	.02	.02	.02	.01	.01	.01	.01	.01	.01	.01	.02
11	.09	.09	.09	.09	.04	.06	.14	.14	.15	.14	.12	.14	.12	.10	.08	.09	.09
12	.07	.07	.04	.06	.16	.21	.20	.15	.20	.15	.16	.12	.10	.09	.10	.10	.11
13	.03	.03	.05	.05	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.06
14	.03	.03	.03	.03	.02	.03	.05	.05	.05	.03	.03	.03	.03	.02	.02	.02	.01
15	.02	.02	.02	.02	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
16	.17	.17	.17	.17	.17	.17	.23	.18	.13	.13	.17	.15	.16	.16	.17	.19	.18
17	.18	.19	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.04
18	.19	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.06
19	.01	.01	.04	.04	.04	.04	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.06
20	.07	.04	.04	.04	.04	.04	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.06
21	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.06
22	.22	.22	.21	.21	.21	.21	.17	.23	.18	.13	.13	.17	.15	.16	.16	.17	.18
23	.04	.04	.03	.03	.03	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.04
24	.03	.03	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.03
25	.03	.03	.03	.03	.03	.03	.08	.08	.08	.06	.06	.06	.06	.06	.06	.06	.03
26	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
27	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
28	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
29	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
30	.09	.08	.08	.08	.08	.08	.11	.11	.10	.10	.10	.10	.10	.10	.10	.09	.09
31	.31	.31	.20	.20	.20	.20	.19	.17	.17	.17	.17	.17	.16	.16	.16	.17	.19
*	1.93	1.86	2.06	1.94	2.29	1.92	1.91	1.72	2.14	1.91	1.67	1.86	1.63	1.64	1.90	1.92	1.93
†	9.40	8.72	9.18	9.60	9.44	11.58	9.04	8.29	9.49	9.41	7.75	8.34	7.63	8.06	9.24	8.94	9.99
																	9.52
																	9.38

* The figures in this row give the totals for the month.

† The totals from January 1st.

Daily Rainfall.

	Day of Mo.	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Bromley	Beckenham	South Norwood	Beddington	Wimbledon	Wimbledon	Putney	Worlester Park	Hatcham	West Morden	Kingston H.	Richmond	Kew Grd.	Kew Grd.	Kew Grd.	Gumbe. Grd.
1	.22	.24	.02	.27	.28	.10	.12	.11	.11	.11	.07	.07	.08	.08	.08	.08	.08	.07	.08	.10	.10	.08	.08	.10
2	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
3	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
4	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
5	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
6	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
7	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
8	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
9	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
10	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
11	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
12	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
13	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
14	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
15	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
16	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
17	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
18	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
19	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
20	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
21	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
22	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
23	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
24	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
25	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
26	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
27	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
28	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
29	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
30	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
31	.22	.15	.10	.20	.28	.01	.04	.03	.03	.01	.02	.02	.01	.01	.01	.01	.01	.02	.02	.03	.03	.04	.04	.04
*	.20-11	9-41	9-40	8-89	7-71	8-75	8-39	8-22	8-60	7-63	8-53	8-56	6-93	8-55	7-68	6-83	7-86	7-31	7-33	7-94	8-15	8-23	7-00	8-09

* The figures in this row give the totals for the month.

† The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for May is 1.95 ins.

May, 1907.

	Day of Mo.	Wandsworth	Cornham	West Street	Norwood	Gipsy Hill	Forest Hill	Whetstone	Vilminge-ton	Ethelham	Munhead	Brockwell	Clapham Park	Battersea	Waterloo	Cambridge Well	Tottenhamq.	Hill	Greenwich	Deptford	Southwark
1	.09	.10	.04	.05	.04	.10	.09	.02	.01	.07	.08	.05	.10	.03	.01	.01	.03	.01	.06	.06	.06
2	.10	.09	.10	.09	.10	.06	.11	.10	.12	.09	.07	.07	.09	.03	.01	.03	.01	.06	.06	.04	.03
3	.10	.09	.10	.09	.10	.09	.10	.03	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.07	.07	.07
4	.01	.01	.01	.03	.03	.02	.01	.01	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.02
5	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
6	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
7	.28	.28	.27	.26	.24	.23	.22	.28	.30	.30	.29	.18	.20	.30	.08	.28	.24	.22	.13	.21	.17
8	.22	.27	.22	.21	.23	.20	.20	.09	.10	.03	.06	.11	.17	.24	.29	.27	.25	.15	.21	.14	.19
9	.02	.01	.01	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
10	.04	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.10	.11	.11	.10	.11	.10	.10	.10	.11	.07	.10	.08
12	.11	.10	.10	.10	.10	.10	.10	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06
13	.06	.10	.12	.12	.12	.12	.12	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06
14	.03	.08	.08	.08	.08	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07
15	.03	.01	.19	.19	.19	.19	.19	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
16	.17	.17	.17	.17	.17	.17	.17	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
17	.17	.17	.17	.17	.17	.17	.17	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
18	.18	.18	.18	.18	.18	.18	.18	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
19	.19	.19	.19	.19	.19	.19	.19	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
20	.05	.09	.02	.04	.04	.04	.04	.02	.02	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
21	.21	.21	.20	.22	.24	.20	.19	.19	.19	.25	.18	.28	.21	.18	.14	.24	.32	.18	.14	.15	.20
22	.13	.17	.20	.22	.24	.20	.19	.19	.19	.19	.01	.01	.01	.01	.01	.01	.01	.05	.05	.05	.05
23	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04
24	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
25	.05	.14	.08	.11	.07	.07	.07	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04
26	.11	.11	.11	.11	.11	.11	.11	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
27	.11	.11	.11	.11	.11	.11	.11	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
28	.11	.11	.11	.11	.11	.11	.11	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
29	.11	.11	.11	.11	.11	.11	.11	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
30	.15	.14	.14	.14	.14	.14	.14	.13	.13	.13	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12
31	.14	.18	.13	.13	.13	.13	.13	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12
Day of Mo.	7	8.05	7.57	8.54	1.60	1.85	1.61	1.84	1.81	1.58	1.72	1.41	2.00	2.15	2.55	1.89	1.42	1.26	2.10	2.14	1.89
†	7.76	8.61	8.38	8.48	6.69	8.59	8.01	8.81	7.79	6.69	5.70	9.48	8.58	5.77	5.53	5.43	5.27	8.72	8.16	7.53	6.73

* The figures in this row give the totals for the month.

+ The totals from January 1st.

NOTES.

MAY, 1907.

THE month has been one of moderate rainfall and temperature, but somewhat sunless. The frost on the 19th did some damage to potatoes and scarlet runners, but it does not seem to have affected the fruit trees, except about Purley, where the observer mentions that the fig-trees, walnuts, and strawberries are much cut up. There has been a great wealth of blossom. The apple blossomed at Epsom on the 3rd, the white lilac on the 4th, the horse chestnut on the 8th, the purple lilac on the 9th, the laburnum on the 12th, the white may on the 13th, and the pink may on the 16th. At Wallington the dates were—the pink lilac on the 6th, the white lilac and white chestnut on the 9th, the white may and laburnum on the 12th, and the red and pink may and pink chestnut on the 18th. Distant thunderstorms seem to have been experienced throughout the district on the 11th, 25th, and 31st, and there was distant thunder and also sheet lightning on several other days. Hail occurred at Upper Gatton on the 3rd and 18th, at Croydon on the 20th, and at Kew on the 19th. On the 7th gloom was reported at Greenwich, and at West Norwood on that date the rain had a slight smoky tinge. Solar haloes are reported from Epsom on the 2nd, 3rd, 5th, 8th, 10th, 16th, and 25th, from Upper Gatton on the 3rd, 8th, 10th, and 25th, from Greenwich on the 8th, 9th, and 10th, from Nutfield on the 2nd and 7th, and from Wallington on the 10th; whilst there were lunar haloes at Epsom on the 23rd and 24th, at Upper Gatton on the 24th, and at Benhilton on the 25th. The month has been somewhat unhealthy, cases of diphtheria, scarlet fever, measles, and whooping cough being reported from many places. The rainfall is below the average, varying from about .21 in. at Greenwich to .08 in. at Croydon and Wallington. The mean temperature is about the average, and was at Worcester Park $53^{\circ}4$, at Croydon (Park Hill House) $53^{\circ}3$, at Epsom and Wallington $52^{\circ}8$, and at Warlingham $51^{\circ}6$. There were recorded at Wallington 149.5 hours of sunlight, which is 49.4 hours or ten per cent. below the May average of the twenty years 1886-1905. There are only three lower May readings.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

NOTES.

J U N E, 1907.

THE month has been one of the coolest and most cloudy and windy Junes for many years past. During the past twenty-two years the mean temperature has only been lower in June, 1898 and 1903, and during this period it is likewise the most cloudy, windy, and sunless June. It is therefore not surprising that all those engaged in the cultivation of the soil are anxious. Hay-cutting commenced at Beddington on the 15th, and some was carried on the 24th. One of the observers at Kew remarks that "at the end of the month bees were starving and required feeding, a most unusual condition for June." Heavy thunderstorms occurred on the 1st and 29th, and at Epsom on the 1st 0.80 in. of rain fell in twenty minutes, and at Clapham Park 1.37 in. of rain fell in three and a half hours. Distant lightning and thunder also took place on several other days. A rainbow was observed at Upper Gatton on the 6th, and hail fell at Nutfield on that date. The shade temperature did not exceed 70° more than three times at any place in the district. Solar haloes were observed at Greenwich on the 11th, 18th, 20th, and 30th; at Epsom on the 4th, 11th, and 23rd; at Upper Gatton on the 4th, 11th, and 28th; and at Nutfield on the 29th. The mean barometer, reduced to 32° F. and sea-level, was at Wallington 29.867, and is the lowest June value in the record. The mean temperature of the month is rather over 2° below the average, and was at Epsom 57°.7, at Croydon (Park Hill House) 57°.5, at Wallington 57°.0, at Worcester Park 56°.9, and at Warlingham 54°.8. The rainfall, owing to the thunderstorms, is very variable. Evaporation during the month was at Croydon just over the average. There were recorded at Wallington 150.3 hours of sunlight, which is 51.9 hours or eleven per cent. below the June average of the twenty years 1886-1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

* The figures in this row give the totals for the month.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for June is 1.96 ins.

June, 1907.

* **TRIM**: It ~~means~~ in this row give the totals for the month.

* The figures in this row give the totals for the month.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for June is 1.96 ins.

June, 1907.

Day of Mo.	Heath Common Wandsworth	Streetham	Upper Norwood	West Merton	Upper Dartford	Vilming- ton	Eleham	Northend	Brookwell	Dulwich	Clapham Park	Battersea	Camberwell (Towson, H.A.)	Camberwell (The Green- Well)	Hill (Elstree & Totting- ton)	Grenwich	Deptford	Southwark	Dark
1	.68	.47	.58	.48	.48	.48	.44	.53	.34	.37	.73	.79	.84	.60	.60	.25	.38	.44	.38
2	.03	.02	.02	.02	.02	.02	.04	.01	.02	.01	.02	.02	.01	.01	.01	.01	.02	.02	..
3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	.07	.03	.02	.03	.03	.05	.01	.07	.23	.12	.03	.05	.02	.01	.01	.04	.04	.04	.04
5	.30	.38	.09	.11	.08	.10	.07	.05	.05	.05	.09	.14	.22	.09	.33	.28	.18	.12	.14
6	.08	.06	.02	.02	.02	.04	.01	.02	.02	.01	.03	.01	.02	.01	.03	.01	.03	.01	.04
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	.03	.02	.03	.03	.03	.06	.07	.07	.07	.23	.12	.03	.05	.03	.03	.02	.07	.07	.04
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10	.09	.08	.08	.08	.08	.13	.07	.15	.14	.04	.03	.01	.09	.04	.07	.06	.06	.05	.04
11	.03	.03	.01	.03	.01	.12	.17	.17	.12	.08	.06	.08	.03	.02	.02	.02	.02	.03	.01
12	.05	.05	.09	.18	.21	.21	.17	.17	.12	.08	.03	.02	.02	.02	.02	.02	.08	.10	.05
13	.04	.04	.02	.04	.04	.04	.02	.04	.04	.04	.01	.01	.01	.02	.02	.02	.02	.05	.21
14	.18	.20	.23	.25	.25	.25	.24	.24	.25	.29	.18	.20	.18	.14	.20	.21	.36	.20	.02
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17	.02	.01	.01	.01	.01	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
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23	.03	.03	.08	.10	.06	.07	.04	.03	.03	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
24	.11	.15	.17	.20	.26	.20	.15	.16	.33	.21	.34	.23	.09	.11	.15	.10	.06	.05	.02
25	.06	.01	.05	.07	.06	.06	.05	.01	.01	.04	.01	.02	.03	.02	.06	.04	.04	.05	.02
26	.01	.07	.05	.06	.06	.06	.05	.06	.04	.05	.06	.06	.03	.05	.07	.06	.03	.06	.02
27	.06	.07	.05	.06	.06	.06	.04	.05	.06	.07	.06	.06	.05	.05	.05	.04	.04	.06	.02
28	..	.72	.74	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77
29	.53	.72	.25	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74	.74
30	..	.79	.79	.68	.68	.68	.68	.68	.68	.68	.68	.68	.68	.68	.68	.68	.68	.68	.68
*	2.50	2.32	1.79	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68	2.68
+ 10-26	10-37	9-36	11-22	11-22	11-00	11-23	8-80	11-13	10-71	11-27	10-24	8-83	7-24	12-50	11-71	11-62	7-75	6-21	11-57
																			1.75

* The figures in this row give the totals for the month

† The totals from January 1st.

Day of Mo.		St. Mary		Abinger (Reectory)		The Abing Hall		Dorking (Denbies)		Redhill		Betchworth		Reigate Hill		Upper Gatton		Chaldon		Catherham		Westerham (Hill Est.)		Westerham (Towway)		Knockholte (Gau.)		Knockholte (Power gau.)		Chevening Park		Sevenoaks		Chelsham		Warlinge		Kemsley (Heazlelea)	
1	2	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04		
2	3	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04		
3	4	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
4	5	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
5	6	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
6	7	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
7	8	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
8	9	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
9	10	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
10	11	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
11	12	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
12	13	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
13	14	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
14	15	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
15	16	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
16	17	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
17	18	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
18	19	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
19	20	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
20	21	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
21	22	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
22	23	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
23	24	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
24	25	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
25	26	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
26	27	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
27	28	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
28	29	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
29	30	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
30	31	.02	.03	.06	.16	.13	.11	.09	.05	.05	.09	.15	.10	.08	.07	.06	.05	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04			
31	*	1.79	1.57	1.65	1.91	2.47	1.88	1.37	1.35	1.18	1.70	1.35	1.29	1.62	1.29	1.50	1.28	1.63	1.00	1.26	1.08	1.28	1.10	1.11	1.26	1.39	1.21	1.29	1.25	1.29	1.23	1.29	1.23	1.29	1.23				
*	15.18	14.69	16.46	16.06	15.11	15.21	12.61	12.89	11.85	12.77	14.52	13.83	13.53	14.67	14.93	12.58	12.21	12.96	11.14	13.18	12.38	12.50	13.93	12.39															

* The figures in this row give the totals for the month.
† The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for June is 1.96 ins.

June, 1907.

Day of Mo.	Wandsworth	Commonwealth	Streetham	West Norwood	Upper Norwood	Lower Norwood	Forest Hill	Forest Hill (Cemetery Rd.)	Forest Hill (Hornsey Rd.)	Forest Hill (Cemetery Hill)	East Dulwich	Brookwell	Park	Battersea	Camberwell Well	Town Hall (Camberwell)	Member Well (Tottenham)	Hill Top (Tottenham)	Grenwich Park	Deptford	Southwark Park						
	.47	.58	.69	.58	.69	.69	.48	.48	.48	.48	.53	.68	.68	.62	.62	.60	.60	.60	.73	.79	.84	.30	.29	.25	.38	.36	.38
1	.02	.03	.02	.02	.03	.02	.03	.03	.03	.03	.01	.01	.01	.02	.02	.01	.01	.01	.07	.02	.01	.01	.01	.01	.01	.01	.
2	.03	.02	.02	.02	.03	.02	.03	.03	.03	.03	.01	.01	.01	.02	.02	.01	.01	.01	.07	.02	.01	.01	.01	.01	.01	.01	.
3	.02	.02	.02	.02	.03	.02	.03	.03	.03	.03	.01	.01	.01	.02	.02	.01	.01	.01	.07	.02	.01	.01	.01	.01	.01	.01	.
4	.07	.08	.09	.11	.08	.10	.07	.05	.05	.05	.01	.01	.01	.02	.02	.01	.01	.01	.07	.02	.01	.01	.01	.01	.01	.01	.
5	.30	.38	.38	.38	.38	.38	.38	.38	.38	.38	.01	.01	.01	.02	.02	.01	.01	.01	.07	.02	.01	.01	.01	.01	.01	.01	.
6	.08	.06	.06	.06	.06	.06	.06	.06	.06	.06	.01	.01	.01	.02	.02	.01	.01	.01	.07	.02	.01	.01	.01	.01	.01	.01	.
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+	10.26	10.37	9.36	11.22	11.22	11.00	11.23	8.80	11.13	10.71	11.27	10.24	8.83	7.24	12.50	11.71	11.62	7.85	6.85	7.75	6.21	11.57	10.52	9.86	9.48		

* The figures in this row give the totals for the month

† The totals from January 1st.

* The figures in this row give the totals for the month

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for July is 2.45 ins.

July, 1907.

	Day of Mo.	Keleby (Place Field)	Bunbury (Heath)	Watton-on-the-Hill	Leatherhead	D'Abremont	Chase	Psonom	Barnstead	Sutton (Waterwerk)	Sutton (Sewer, Wks.)	Carshalton	Wallingford	Croydon (Brixton, Bin.)	Croydon (Wob., Nrd.)	Croydon (Park H., Br.)	Croydon (P.K.H., Ho.)	Croydon (Bram., H.)	Croydon (Avond Rd.)	Addington (Hills)	Pump. St.)	
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*	1.31	.99	1.04
†	12.77	11.44	12.33	12.62	14.90	12.83	12.01	13.44	12.68	10.23	10.93	10.30	10.75	12.17	11.62	11.76	11.14	11.42	12.49	12.13	12.76	12.64

RECORD GREASED.

* The figures in this row give the totals for the month.

+ The totals from January 1st.

Jally Kainail.

The 90 years (1815-1904) average at Greenwich for July is 2.45 ins.

July, 1907.

* The figures in this row give the totals for the month + The totals from January 1st

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for July is 245 ins.

July, 1907.

* The figures in this row give the totals for the month.

NOTES.

JULY, 1907.

THE month has been cold and very dry. It is the coldest July since 1888, and at Wallington the mean shade minimum $50^{\circ}8$, and the mean grass minimum $47^{\circ}0$, are the lowest in the record. On the 11th, at Epsom, the thermometer on the grass registered $30^{\circ}3$. At Sanderstead on the 8th, at 10.30 p.m., the observer noticed a pink glow over the whole western sky from north to south, with the highest altitude to the north-west about $35^{\circ}0$; and at Epsom on the 15th and 16th there were sunset glows of exceptional brilliance, orange deepening to a fiery crimson. The observer at Abinger Hall saw, on the 5th, a large drove of tits, including long-tailed, blue and willow wren, from forty to fifty in all. The cold weather has caused vegetation to be backward, and the cold winds have occasioned much blight on the roses, apples, and potatoes, and at West Wickham outdoor tomatoes are a failure, and French beans, scarlet runners, and marrows are very poor. During the month thunder and lightning occurred on many days, and thunderstorms on the 10th, 21st, and 30th in many places, and there was also hail on the 6th and 30th. At Epsom on the 6th, .20 in. of rain fell in five minutes; at Clapham Park on the 10th .42 in. fell in one hour; and at Betchworth on the 30th .72 in. fell in fifteen minutes. At Croydon on the 10th, at 11 a.m., there was a violent gust of wind, which uprooted several trees. Solar haloes were observed at Greenwich on the 3rd and 13th, at Nutfield on the 5th, 6th, and 30th, at Upper Gatton on the 8th and 13th, and at Epsom on the 8th, 13th, 26th, and 29th. The mean temperature of the month is between $3^{\circ}0$ and $3^{\circ}5$ below the average, and was at Croydon (Park Hill House) $59^{\circ}9$, at Epsom $59^{\circ}6$, at Worcester Park $59^{\circ}4$, at Wallington $59^{\circ}2$, and at Warlingham $57^{\circ}5$. The rainfall is nearly one and a half inches below the average, and at Croydon (Park Hill House) evaporation was half-an-inch below the average. With reference to the health of the district, cases of diphtheria and scarlet fever have been somewhat numerous in several parts. There were recorded at Wallington 162.4 hours of sunlight, which is 53.2 hours or eleven per cent. below the July average of the twenty years 1886-1905. It has only been smaller in July, 1888 and 1890.

FRANCIS CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

NOTES.

AUGUST, 1907.

Mr. Scovell, of Wickham Road, having left Beckenham, has given up observing for the Society. His place has been very kindly taken by Mr. Angell, the surveyor of the Beckenham Urban District Council, who has established a rain-gauge at the Croydon Road Recreation Ground. The diameter of this gauge is 8 inches, the height of its top above the ground is one foot, and the height of the station above sea-level is 110 feet.

The month has been cool, with, in most parts, about an average rainfall. It has also been somewhat cloudy and sunless. It has been rather unhealthy, there being a considerable increase in scarlet fever cases, but at the same time the death-rate has been remarkably low, and summer diarrhoea has been almost absent. Thunderstorms occurred generally throughout the district on the 6th, 15th, 19th, and 20th, with hail on the 6th, 19th, and 20th. Solar haloes were seen at Epsom on the 4th, 7th, 10th, 12th, 16th, 19th, 22nd, and 27th; at Greenwich on the 4th, 7th, and 22nd; and at Wallington on the 22nd. The harvest, as a rule, is good, though the unsettled weather rendered the gathering of it difficult. At Abinger potatoes are small and much diseased. The observer at Nutfield complains much of the wasps, and mentions that he has destroyed fifty nests, and that there are several in roofs and other places where it is impossible to get at them. As illustrating the coolness of the month, the observer at West Wickham mentions that a catalpa tree which is generally in bloom at the end of July only came into flower in September, and that the swallows packed at Wallington on the 15th and 28th, and departed the same evenings, and that they were packing at the end of the month at Abinger. With reference to the rate of fall of rain—at Abinger Hall, on the 10th, half-an-inch fell in about twenty minutes; and on the same day .48 in. at Redhill fell in one hour. The mean temperature of the month is between one and one and a half degrees below the average, and was at Croydon (Park Hill House) 61°, at Epsom 60°.7, at Wallington 60°.5, at Worcester Park 60°.1, and at Warlingham 58°.5. At Croydon (Park Hill House) evaporation was 0.30 in. above the average, and exceeded the rainfall by 0.63 in. There were recorded at Wallington 164.1 hours of sunlight, which is 34 hours or eight per cent. below the August average of the twenty years 1886-1905. There are only five smaller August values in the record.

FRANCIS CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

Daily Rainfall.

The 90 years (1855-1944) average at Greenwich for August is 25.8 ms.

August, 1944.

Day of Mo.	St. Mary	Abingdon (Fleetorby)	Dorikme (The Hall)	Betheworth	Redhill	Muttonfield (Old Gauge)	Buckland	Reigate Hill	Messelham	Chaldon	Caterham	Westham (Hill Est.)	Kimberhot (Field Beau.)	Knockholt (Garden)	Westham (Town)	Chevening Park	Wrenham	Kennedy (Hazeloea)
1	.19	.20	.24	.23	.20	.18	.16	.15	.13	.14	.24	.26	.20	.19	.22	.21	.22	.21
2	.20	.02	.00	.00	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
3	.20	.02	.00	.00	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
4	.20	.02	.00	.00	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
5	.15	.23	.00	.00	.00	.02	.25	.14	.19	.26	.35	.21	.19	.17	.14	.12	.17	.16
6	.10	.15	.00	.00	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
7	.12	.04	.00	.00	.00	.02	.03	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
8	.08	.07	.09	.09	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07
9	.12	.31	.61	.45	.41	.48	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60	.60
10	.10	.15	.23	.30	.25	.14	.19	.26	.26	.35	.21	.19	.17	.14	.12	.17	.16	.18
11	.11	.04	.00	.00	.00	.02	.03	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
12	.12	.04	.00	.00	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
13	.13	.04	.00	.00	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
14	.14	.28	.29	.30	.28	.26	.24	.17	.18	.16	.17	.18	.16	.17	.19	.22	.16	.18
15	.15	.64	.50	.63	.31	.19	.30	.19	.19	.19	.29	.19	.18	.16	.14	.12	.11	.12
16	.06	.06	.03	.04	.04	.04	.07	.06	.06	.06	.05	.05	.06	.06	.08	.09	.08	.08
17	.17	.90	.99	.98	.99	.92	.00	.05	.97	.89	.00	.97	.90	.90	.102	.180	.61	.86
18	.11	.21	.17	.16	.14	.18	.11	.11	.05	.09	.09	.09	.09	.09	.05	.05	.05	.05
19	.08	.08	.11	.07	.10	.19	.15	.14	.13	.13	.13	.13	.14	.11	.19	.17	.16	.15
20	.08	.07	.11	.10	.12	.13	.07	.06	.10	.00	.00	.00	.00	.00	.00	.07	.06	.06
21	.14	.13	.16	.10	.09	.11	.09	.10	.07	.17	.11	.12	.10	.08	.14	.07	.06	.06
22	.14	.13	.16	.10	.09	.11	.09	.10	.02	.02	.02	.02	.02	.02	.03	.03	.03	.03
23	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.01	.01	.02	.03	.03	.02	.02	.02	.02	.02	.02	.03	.04	.04	.04	.04
25	.07	.11	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
26	.07	.11	.00	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
31	* 2.81	3.15	3.69	3.36	2.97	3.26	3.07	3.03	2.63	2.77	2.91	2.65	2.64	2.58	4.43	2.47	2.15	2.60
*	+ 17.99	17.84	20.15	19.42	18.08	18.47	15.68	15.92	14.48	15.54	17.43	16.48	16.17	17.25	19.36	15.05	14.79	14.90
†																	14.98	14.98

* The figures in this row give the totals for the month.

† The totals from January 1st.

MONTHLY GAUGE.

RECORD GAUGED.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for August is 2.32 ins.

August, 1907.

Day of Mo.	Kenley (Pace's Field)	Sanderstead	Burgess Heath	Waltham-on-the-Hill	Waltham-on-Hill	Hedley	Bansestedd	Stretton (Waterwick)	Sutton (Sewer, Wks.)	Wallingford	Grobydon (Brim, Bn.)	Croydon (Pkr. H. Ho.)	Croydon (Parb. H. Rd.)	Croydon (Wob. N. rd.)	Croydon (Wm. N. rd.)	Croydon (Pkr. H. Rd.)	Croydon (Bram. H.)	Croydon (Avond. rd.)	Croydon (Hills)	Addington (Pump. St.)	Addington (In.		
1	.22	.18	.21	.20	.20	.23	.20	.23	.22	.18	.19	.18	.20	.20	.18	.19	.18	.20	.21	.19	.18	.18	.
2	.22	.02	.22	.02	.02	.02	.02	.02	.02	.17	.19	.18	.20	.20	.18	.19	.20	.21	.21	.19	.18	.18	.
3	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
4	.16	.11	.11	.11	.11	.11	.14	.14	.15	.24	.20	.16	.27	.21	.16	.25	.16	.15	.13	.11	.10	.10	.
5	.05	.04	.04	.04	.04	.04	.05	.05	.05	.06	.06	.05	.07	.04	.01	.04	.05	.04	.03	.04	.05	.04	.
6	.11	.11	.11	.11	.11	.11	.19	.19	.19	.14	.15	.15	.24	.24	.21	.21	.21	.19	.20	.20	.19	.18	.
7	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
8	.16	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.
9	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.
10	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.
12	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
13	.16	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.
14	.05	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.
15	.16	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.
16	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
17	.97	.93	.91	.82	.99	.92	.89	.91	.95	.99	.87	.77	.82	.83	.90	.82	.76	.78	.51	.97	.86	.87	.
18	.01	.03	.03	.03	.03	.03	.06	.03	.02	.02	.01	.01	.02	.03	.03	.03	.02	.03	.04	.04	.05	.04	.
19	.11	.15	.14	.14	.14	.14	.14	.14	.17	.24	.17	.13	.17	.16	.16	.16	.12	.08	.11	.16	.18	.16	.
20	.04	.08	.04	.08	.11	.09	.13	.02	.04	.03	.09	.14	.14	.15	.13	.13	.11	.10	.14	.11	.16	.19	.
21	.08	.07	.07	.07	.07	.08	.07	.07	.06	.06	.06	.06	.06	.06	.06	.06	.07	.06	.06	.06	.06	.07	.
22	.08	.07	.07	.07	.07	.08	.07	.07	.06	.06	.06	.06	.06	.06	.06	.06	.07	.06	.06	.06	.06	.07	.
23	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
24	.02	.01	.01	.01	.01	.01	.05	.05	.04	.04	.04	.03	.04	.03	.04	.03	.02	.02	.02	.01	.02	.02	.
25	.10	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.
26	.07	.07	.07	.07	.07	.07	.07	.07	.09	.25	.21	.07	.18	.26	.20	.24	.23	.18	.18	.21	.17	.21	.
27	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
28	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
29	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
30	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
31	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.
*	2.19	2.09	2.18	2.37	2.63	2.43	2.38	2.64	2.54	2.23	2.31	2.39	2.45	2.40	2.42	2.16	1.97	2.02	1.69	2.33	2.46	2.38	.
†	14.96	13.53	14.51	15.25	17.33	15.21	14.65	15.98	14.91	12.54	13.32	12.75	13.15	14.59	13.78	13.73	13.16	13.11	14.82	14.59	15.14	15.05	14.90

* The figures in this row give the totals for the month. + The totals from January 1st.

The figures in this row give the totals for the month.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for August is 2.32 ins.

August, 1907.

Day of Mo.	Putney Heath	Wandsworth	Commonwealth	West Norwood	Upper Norwood	Newwood	Forest Hill (Dartford)	Horn-Oxley	Forest Hill (Cemetary)	Slideup	Wilmington	Unheated	Brockwell Park	Clapham Park	Battersea Park	WVaterwerk (The Green)	Cambes' well (Town Hall)	Cambe's well (Leytonstone)	Hill Top	Greenwich	Deptford Park	Southwark Park		
1	.34	.38	.26	.31	.30	.34	.39	.38	.01	.01	.22	.27	.30	.32	.38	.46	.41	.01	.27	.24	.16	.36	.32	.30
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* The figures in this row give the totals for the month.

† The totals from January 1st.

Daily Rainfall. The 90 years (1815-1904) average at Greenwich for September
Depression, 100.

* The figures in this row give the totals for the month. † The totals from January 1st.

Daily Rainfall. The 90 years (1815-1904) average at Greenwich for September is 2.24 ins. September, 1907.

The 90 years (1815-1904) average at Greenwich for September is 224 ins.

RECORD GEASER.									
Croydon (Pump. St.)		Croydon (Hills)		Croydon (Aveond Rd.)		Croydon (Bram. H.)		Croydon (P.R.H. Ho.)	
Croydon (Wob. Rd.)		Croydon (W.M. N. Rd.)		Croydon (W.M. Wks.)		Croydon (Brim. Bn.)		Croydon (Par. H. R.)	
1 1		2 2		3 3		4 4		5 5	
Kenny (Place Fell)		Barker (Seated)		Purley (Place Fell)		Heath (The Hill)		Waldo-on-Hill	
Day of Mo.		11 11		12 12		13 13		14 14	
10 10		15 15		16 16		17 17		18 18	
9 9		19 19		20 20		21 21		22 22	
8 8		23 23		24 24		25 25		26 26	
7 7		27 27		28 28		29 29		30 30	
6 6		31 31		32 32		33 33		34 34	
5 5		35 35		36 36		37 37		38 38	
4 4		39 39		40 40		41 41		42 42	
3 3		43 43		44 44		45 45		46 46	
2 2		47 47		48 48		49 49		50 50	
1 1		51 51		52 52		53 53		54 54	
* 51		55 55		56 56		57 57		58 58	
+ 55-47		59 59		60 60		61 61		62 62	
14-57		63 63		64 64		65 65		66 66	
15-86		67 67		68 68		69 69		70 70	
15-86		71 71		72 72		73 73		74 74	
15-86		75 75		76 76		77 77		78 78	
15-86		79 79		80 80		81 81		82 82	
15-86		83 83		84 84		85 85		86 86	
15-86		87 87		88 88		89 89		90 90	
15-86		91 91		92 92		93 93		94 94	
15-86		95 95		96 96		97 97		98 98	
15-86		99 99		100 100		101 101		102 102	

* The figures in this row give the totals for the month.

+ The totals from January 1st.

Day of Mo.	West	Hayes	Keston	Oprington	Southfleet	Chislehurst	Bromley	Commonwealth	Southwood	Beddington	Wimbledon	Kennington	Merton	West Dulwich	West Malling	West Westerham	West Anerley	West Bromley	West Bromley	West Croydon	West Dulwich	West Norwood	West Peckham	West Hayes	West Marden	West Westerham	West Esher	West Molesey	West Surbiton	West Kingston	West Kew	West Kew G.d.	West Cumn. G.	West Kew
1	.04		
2	.13	.05	.04	.02	.01	.04	.03	.05	.04	.04	.07	.09	.13	.09	.13	.06	.08	.06	.08	.06	.08	.10	.13	.20	.19	.03	.03	.03	.03	.03	.03			
3	.15	.17	.13	.15	.14	.11	.12	.11	.12	.11	.13	.12	.14	.12	.13	.16	.15	.15	.16	.15	.15	.14	.14	.13	.14	.03	.03	.03	.03	.03	.03			
4	.08	.08	.03	.07	.04	.06	.06	.06	.07	.06	.08	.10	.12	.13	.13	.12	.13	.06	.04	.03	.06	.03	.04	.03	.03	.03	.03	.03	.03	.03	.03			
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+	16.13	14.35	15.15	13.99	13.56	12.82	14.51	13.99	..	13.18	14.06	14.36	12.62	14.90	13.05	11.79	13.58	13.17	13.47	13.57	14.48	14.25	13.09	15.63	15.08	15.63	15.63	15.63	15.63	15.63	15.63	15.63		

* The figures in this row give the totals for the month. † The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for September is 2.24 ins.

September, 1907.

Day of Mo.	Putney Heath	West Norwood	Upper Norwood	Norwood	West Norwood	Forest Hill (Dartford, etc.)	Forest Hill (Hom. O. Ad.)	Forest Hill (Cemetery)	Dartford	East Dulwich	Battersea Park	Clapham Park	Bronkwell Park	Kennington	Southwark Park	Deptford	Greenwich	Camberwell (Leytonstone)	Camberwell (Well)	Camberwell (Waterloo)	Camberwell (The Green)	Camberwell (Town Hall)	Camberwell (Well)	Camberwell (Waterloo)	Deptford	Southwark Park
1	.03	.02	.01	.01	.01	.06	.11	.04	.02	.02	.07	.15	.15	.17	.17	.17	.01	.03	.02	.01	.01	.01	.01	.01	.02	.02
2	.10	.09	.07	.06	.09	.11	.13	.15	.13	.20	.25	.11	.09	.14	.13	.12	.11	.09	.08	.05	.13	.10	.11	.10	.13	.13
3	.11	.12	.12	.11	.11	.13	.11	.11	.11	.11	.09	.11	.11	.10	.08	.09	.10	.05	.07	.09	.12	.11	.11	.10	.12	.12
4	.12	.13	.13	.11	.13	.11	.11	.09	.11	.11	.09	.11	.11	.10	.08	.09	.10	.05	.07	.09	.12	.11	.11	.10	.12	.12
5	.04	.03	.02	.07	.06	.05	.05	.05	.05	.03	.04	.04	.05	.05	.05	.05	.05	.07	.02	.02	.02	.02	.02	.02	.02	.02
6	.06	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
7	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08
8	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09	.09
9	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10
10	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11
11	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12
12	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13
13	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14	.14
14	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15	.15
15	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16	.16
16	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17	.17
17	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18	.18
18	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19	.19
19	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20	.20
20	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21
21	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22
22	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23
23	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24
24	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
25	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26
26	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27	.27
27	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28
28	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29	.29
29	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30	.30
30	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31	.31
*	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32	.32
†	13.95	14.31	12.52	14.87	15.55	14.68	15.04	12.06	14.92	13.66	14.55	14.12	12.40	10.08	16.69	15.81	15.27	10.78	9.75	10.86	8.57	17.33	14.03	13.14	12.29	

* The figures in this row give the totals for the month.

† The totals from January 1st.

NOTES.

SEPTEMBER, 1907.

THE month has from the 6th been a brilliant one. It has been a dry month, with a rainfall below one inch, except at Eltham, Nunhead, Telegraph Hill, and Southwark Park. With respect to Wallington, there have since 1881 been only three smaller September rainfalls, *viz.* in 1890, 1895, and 1898. The sunshine, singularly enough, has also been small, and since 1885 there have been only seven Septembers with a smaller amount of sun, *viz.* in 1885, 1887, 1892, 1894, 1896, 1897, and 1905. The month has been fairly healthy, except that scarlet fever cases have been somewhat numerous. There were many foggy mornings, with heavy dews. There were frosts on the 22nd, 23rd, and 24th on the grass in many parts of the district, and vegetable marrows and scarlet runners were damaged. Sheet lightning was seen at Nutfield on the 4th, and at Epsom on the 25th, 27th, and 29th. At Epsom there was a distant thunder-storm on the 30th, and 14 in. of rain fell in three minutes. The observer at Nutfield mentions the arrival of numerous swallows on the 11th, 12th, and 18th; and the observer at West Wickham says, "The *Brassica* family have suffered very much from the drought on our light soil during the month"; and also that "English out-door fruits will be very scarce in a month's time, as they cannot be kept owing to the high temperature." Solar haloes were seen at Betchworth on the 1st, at Greenwich on the 17th and 25th, and at Epsom on the 1st, 14th, 25th, and 27th; and a lunar halo was seen at Epsom on the 25th. The rainfall is about one-third of average. The mean temperature of the month is from three-quarters to a degree and a quarter above the average, and was at Croydon (Park Hill House) and Epsom $58^{\circ}9$, at Worcester Park $58^{\circ}6$, at Wallington $58^{\circ}3$, and at Warlingham $57^{\circ}8$. At Croydon (Park Hill House) the evaporation was 1.87 in., which is .365 in. above the average. There were recorded at Wallington 152.6 hours of sunlight, which is 7.1 hours or one per cent. below the September average of the twenty years 1886-1905.

FRANCIS CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

NOTES.

OCTOBER, 1907.

THE month has been very wet, with a very large number of rainy days, warm, with an almost total absence of frost, and very unhealthy—scarlet fever, diphtheria, and catarrh being prevalent, though the death-rate is low. The mean barometer reading at Wallington, reduced to 32° F. and sea-level 29·639 in., is the lowest October value for considerably over twenty years. The celery maggot has been exceedingly destructive, and complaints of its ravages come from many parts of the district. Owing to mildness of the month, dahlias and begonias were in flower in Croydon, and at Abinger Hall *Choisya ternata* was flowering freely, and also blue *Polyanthus*, *Crocus speciosus* and *autumnale* and its varieties. The last swallow left Nutfield on the 17th. A thunderstorm occurred throughout the district on the 11th, and on the 14th the observer at Sanderstead reports one between 2 and 3 p.m., with hailstones .5 in. in diameter. On the 20th there was a gale at Wallington, and a large elm was broken off about twelve feet from the ground. Rainbows were seen at Epsom on the 9th, 11th, and 15th, and at Wallington on the 15th and 19th. Solar haloes were seen at Greenwich on the 3rd, 5th, and 21st; at Epsom on the 13th, 15th, 18th, and 21st; and at Wallington on the 13th; and a parhelion was observed at Greenwich on the 3rd. A lunar halo was observed at Epsom and Greenwich on the 21st, and a lunar bar at the latter place on the 15th. In the thunderstorm on the 11th the lightning at Epsom was of a deep blue colour. The rainfall at Croydon (Park Hill House) was 0·79 in. above the average, and at Wallington 0·58 in., but in many parts of the district it was very much more. The mean temperature of the month was rather over 2° above the average, and was at Croydon (Park Hill House) 51°·8, at Wallington and Worcester Park 51°·4, at Epsom 51°·2, and at Warlingham 50°·6. At Croydon (Park Hill House) evaporation was 1·415 in., or 0·620 in. above the average, and there was no percolation through the chalk gauge. There were recorded at Wallington 103·3 hours of sunlight, which is 5·5 hours or one per cent. above the October average of the twenty years 1886–1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

* The figures in this row give the totals for the month. † The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for October is 2.71 ins.

October, 1907.

Day of Mo.	Kennedy Field	Banstead	Purley	Hangeford	Heath	Waldton-on-Hill	Heathfield	Hedley	Leatherhead	D'Abbramo	Chase	Elmsfold	Banstead	Benthillion	Stutton	Waterworks	Wells Wks.	Beddinge	Wallingford	Croydon Bn.	Whibnd.	Croydon	Woburn Rd.	Parke H. Rd.	Croydon H. Rd.	Bram. H. Rd.	Averdon H. Rd.	Addington H. Rd.	Pump St.	Addgtn.				
1	.40	.34	.36	.39	.32	.30	.34	.27	.28	.28	.27	.28	.29	.29	.31	.32	.32	.29	.32	.35	.35	.38	.32	.32	.32	.32	.32	.32	.32	.32				
2	.07	.01	.03	.02	.06	.05	.20	.15	.03	.01	.09	.10	.11	.12	.09	.11	.11	.11	.10	.13	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11				
3	.12	.11	.12	.11	.12	.11	.11	.05	.04	.09	.09	.10	.11	.11	.11	.11	.11	.11	.10	.13	.11	.11	.11	.11	.11	.11	.11	.11	.11	.11				
4	.19	.21	.18	.24	.22	.14	.20	.23	.19	.15	.15	.15	.15	.15	.15	.15	.16	.17	.17	.18	.19	.17	.16	.16	.16	.16	.16	.16	.16	.16				
5	.19	.21	.18	.22	.16	.26	.20	.15	.09	.10	.15	.07	.06	.06	.06	.06	.06	.06	.07	.06	.08	.10	.09	.09	.09	.09	.09	.09	.09	.09				
6	.18	.18	.22	.22	.16	.26	.20	.15	.09	.10	.03	.03	.03	.03	.03	.03	.03	.02	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01				
7	.15	.16	.13	.11	.11	.17	.16	.10	.08	.12	.08	.08	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07	.07				
8	.10	.06	.08	.09	.09	.09	.03	.03	.06	.03	.08	.14	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10	.10				
9	.14	.13	.13	.26	.23	.20	.10	.13	.15	.28	.14	.15	.14	.15	.14	.15	.14	.15	.22	.22	.20	.19	.14	.16	.18	.16	.10	.10	.13	.13				
10	.14	.13	.13	.26	.23	.20	.10	.13	.15	.28	.14	.15	.14	.15	.14	.15	.14	.15	.22	.22	.20	.19	.14	.16	.18	.16	.10	.10	.13	.13				
11	.24	.40	.37	.39	.39	.61	.33	.29	.28	.23	.24	.23	.24	.23	.24	.23	.24	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25				
12	.05	.06	.05	.01	.01	.01	.02	.01	.06	.02	.01	.01	.02	.01	.01	.02	.01	.02	.01	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01				
13	.05	.05	.06	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05	.05				
14	.46	.44	.45	.58	.55	.59	.59	.55	.55	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45	.45				
15	.29	.24	.25	.25	.25	.31	.49	.30	.35	.27	.20	.24	.21	.17	.15	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13				
16	.17	.13	.16	.29	.34	.41	.27	.48	.35	.27	.20	.24	.21	.17	.15	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13	.13				
17	.44	.38	.41	.55	.55	.65	.27	.34	.34	.84	.58	.38	.60	.49	.37	.40	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41	.41				
18	.23	.22	.21	.28	.21	.21	.35	.37	.50	.26	.33	.37	.31	.37	.31	.32	.23	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22				
19	.09	.05	.06	.10	.08	.08	.08	.08	.06	.06	.04	.01	.03	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06	.06				
20	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.13	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12	.12				
21	.12	.09	.07	.14	.07	.14	.07	.13	.11	.12	.09	.12	.10	.09	.08	.10	.09	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08	.08				
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
*	4.04	3.77	3.87	4.98	5.29	5.16	4.78	5.15	4.61	3.63	3.86	3.60	3.18	3.49	3.39	
+	19.51	17.97	19.01	..	21.15	23.07	20.80	20.21	21.89	20.03	16.68	17.63	16.94	16.93	18.77	17.93	18.08	16.87	16.74	19.17	18.94	19.83	19.32	19.11	19.11	19.11	19.11	19.11	19.11	19.11	19.11	19.11	19.11	19.11

† The totals from January 1st.

* The averages in this row give the totals for the month.

Daily Rainfall.

The 90 years (1811-1904) average at Greenwich for October is 2.71 ins.

Day of Mo.	West	Wickham	Hedges	Mesdon	Oxfordton	Orpington	Southfleet	Bromley	Chislehurst	Beckenham	Northwood	South	Beddington	Wimbledon	Wimbledon	West	Molesey	Esher	Surbiton	Kingsbury	Richmond	Keynsham	Keynsham	
1	.39	.28	.20	.28	.13	.04	.03	.11	.14	.17	.22	.27	.27	.26	.19	.21	.19	.19	.19	.20	.21	.21	.15	.14
2	.02	.04	.03	.02	.13	.14	.17	.14	.14	.14	.17	.27	.27	.27	.26	.19	.21	.21	.21	.20	.20	.21	.15	.15
3	.16	.13	.14	.16	.20	.21	.21	.21	.21	.21	.21	.26	.26	.26	.25	.20	.21	.21	.21	.20	.20	.21	.06	.02
4	.20	.21	.21	.20	.21	.21	.21	.21	.21	.21	.21	.26	.26	.26	.25	.20	.21	.21	.21	.20	.20	.21	.06	.02
5	.11	.15	.25	.20	.27	.14	.14	.12	.13	.09	.04	.06	.06	.06	.09	.05	.04	.04	.05	.05	.05	.05	.04	.05
6	.11	.10	.03	.02	.03	.02	.02	.02	.02	.02	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01
7	.02	.01	.02	.01	.06	.08	.08	.08	.08	.08	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.04	.03
8	.16	.26	.29	.29	.38	.38	.38	.38	.38	.38	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24	.24
9	.03	.03	.04	.03	.04	.05	.04	.03	.04	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
10	.11	.17	.18	.17	.39	.12	.08	.10	.07	.18	.21	.20	.20	.20	.20	.20	.11	.17	.16	.10	.07	.10	.11	.11
11	.10	.03	.02	.03	.02	.03	.02	.03	.05	.14	.05	.42	.32	.32	.32	.32	.22	.15	.18	.19	.10	.27	.03	.07
12	.07	.08	.08	.08	.03	.01	.03	.05	.07	.04	.07	.04	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
13	.07	.08	.08	.08	.03	.01	.03	.05	.07	.04	.07	.04	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
14	.57	.44	.43	.37	.33	.34	.41	.42	.48	.36	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38	.38
15	.02	.03	.02	.03	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02	.02
16	.25	.26	.27	.27	.17	.17	.15	.17	.17	.18	.20	.16	.20	.17	.24	.25	.25	.25	.25	.25	.25	.25	.25	.25
17	.11	.10	.12	.11	.16	.16	.16	.07	.10	.10	.05	.09	.16	.15	.24	.22	.22	.22	.22	.22	.22	.22	.22	.22
18	.59	.64	.60	.33	.11	.44	.33	.56	.26	.26	.31	.25	.19	.20	.21	.12	.12	.12	.12	.12	.12	.12	.12	.12
19	.24	.30	.28	.25	.19	.23	.21	.20	.23	.18	.20	.30	.26	.26	.26	.26	.21	.21	.21	.21	.21	.21	.21	.21
20	.06	.01	.03	.01	.02	.02	.03	.03	.03	.03	.05	.02	.05	.02	.04	.03	.03	.05	.03	.03	.03	.03	.03	.03
21	.05	.07	.03	.03	.02	.02	.04	.07	.07	.04	.07	.05	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
22	.05	.07	.03	.03	.02	.02	.04	.07	.07	.04	.07	.05	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03	.03
23	..	.04	.04	.02	.02	.03	.04	.04	.04	.02	.04	.02	.04	.02	.04	.02	.02	.02	.02	.02	.02	.02	.02	.02
24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25	.09	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*	3.88	3.65	4.02	3.20	3.28	2.89	3.06	3.32	3.55	3.10	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22	3.22
†	20.01	18.00	19.17	17.19	16.84	15.71	17.57	17.31	..	16.28	17.28	17.58	15.51	18.36	16.18	14.78	17.04	16.66	17.33	16.94	18.47	17.96	16.59	19.73

* The figures in this row give the totals for the month.
† The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for October is 271 ins.

October, 1907.

* The figures in this row give the totals for the month. † The totals from January 1st.

RECORD CREAMERY.									
MONTHLY GAUGE.									
Day of Mo.	1	2	3	4	5	6	7	8	9
Heolmbury Est. Mary	..	..	..	..	..	..	..	..	..
Abingher (Brettover)	..	..	..	..	..	..	..	..	..
The Hall (Abingher)	..	..	..	..	..	..	..	..	..
Bettincroft (Denebries)	..	..	..	..	..	..	..	..	..
Helehill	..	..	..	..	..	..	..	..	..
Mutfield (Old Gauge)	..	..	..	..	..	..	..	..	..
Mutfield (New Gauge)	..	..	..	..	..	..	..	..	..
Helehill	..	..	..	..	..	..	..	..	..
Bettincroft (Denebries)	..	..	..	..	..	..	..	..	..
Helehill	..	..	..	..	..	..	..	..	..
Mutfield (Old Gauge)	..	..	..	..	..	..	..	..	..
Mutfield (New Gauge)	..	..	..	..	..	..	..	..	..
Buckland	..	..	..	..	..	..	..	..	..
Merstham	..	..	..	..	..	..	..	..	..
Chippingstead	..	..	..	..	..	..	..	..	..
Chaldon	..	..	..	..	..	..	..	..	..
Catherham	..	..	..	..	..	..	..	..	..
Westerham (Hill Est.)	..	..	..	..	..	..	..	..	..
Westerham (Twoyn)	..	..	..	..	..	..	..	..	..
Knockholt (Gedl Gau.)	..	..	..	..	..	..	..	..	..
Knockholt (Towyn)	..	..	..	..	..	..	..	..	..
Knockholt (Gedl Gau.)	..	..	..	..	..	..	..	..	..
Knockholt (Towyn)	..	..	..	..	..	..	..	..	..
Power (Gau.)	..	..	..	..	..	..	..	..	..
Power (Towyn)	..	..	..	..	..	..	..	..	..
Parke	..	..	..	..	..	..	..	..	..
Sevenoaks	..	..	..	..	..	..	..	..	..
Whittingham	..	..	..	..	..	..	..	..	..
Kenley (Hazeloe)	..	..	..	..	..	..	..	..	..
IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.	IN.
1	2	3	4	5	6	7	8	9	10
10	11	12	13	14	15	16	17	18	19
19	20	21	22	23	24	25	26	27	28
28	29	30	31	32	33	34	35	36	37
37	38	39	40	41	42	43	44	45	46
46	47	48	49	50	51	52	53	54	55
55	56	57	58	59	60	61	62	63	64
64	65	66	67	68	69	70	71	72	73
73	74	75	76	77	78	79	80	81	82
82	83	84	85	86	87	88	89	90	91
91	92	93	94	95	96	97	98	99	100
100	101	102	103	104	105	106	107	108	109
109	110	111	112	113	114	115	116	117	118
118	119	120	121	122	123	124	125	126	127
127	128	129	130	131	132	133	134	135	136
136	137	138	139	140	141	142	143	144	145
145	146	147	148	149	150	151	152	153	154
154	155	156	157	158	159	160	161	162	163
163	164	165	166	167	168	169	170	171	172
172	173	174	175	176	177	178	179	180	181
181	182	183	184	185	186	187	188	189	190
190	191	192	193	194	195	196	197	198	199
199	200	201	202	203	204	205	206	207	208
208	209	210	211	212	213	214	215	216	217
217	218	219	220	221	222	223	224	225	226
226	227	228	229	230	231	232	233	234	235
235	236	237	238	239	240	241	242	243	244
244	245	246	247	248	249	250	251	252	253
253	254	255	256	257	258	259	260	261	262
262	263	264	265	266	267	268	269	270	271
271	272	273	274	275	276	277	278	279	280
280	281	282	283	284	285	286	287	288	289
289	290	291	292	293	294	295	296	297	298
298	299	300	301	302	303	304	305	306	307
307	308	309	310	311	312	313	314	315	316
316	317	318	319	320	321	322	323	324	325
325	326	327	328	329	330	331	332	333	334
334	335	336	337	338	339	340	341	342	343
343	344	345	346	347	348	349	350	351	352
352	353	354	355	356	357	358	359	360	361
361	362	363	364	365	366	367	368	369	370
370	371	372	373	374	375	376	377	378	379
379	380	381	382	383	384	385	386	387	388
388	389	390	391	392	393	394	395	396	397
397	398	399	400	401	402	403	404	405	406
406	407	408	409	410	411	412	413	414	415
415	416	417	418	419	420	421	422	423	424
424	425	426	427	428	429	430	431	432	433
433	434	435	436	437	438	439	440	441	442
442	443	444	445	446	447	448	449	450	451
451	452	453	454	455	456	457	458	459	460
460	461	462	463	464	465	466	467	468	469
469	470	471	472	473	474	475	476	477	478
478	479	480	481	482	483	484	485	486	487
487	488	489	490	491	492	493	494	495	496
496	497	498	499	500	501	502	503	504	505
505	506	507	508	509	510	511	512	513	514
514	515	516	517	518	519	520	521	522	523
523	524	525	526	527	528	529	530	531	532
532	533	534	535	536	537	538	539	540	541
541	542	543	544	545	546	547	548	549	550
550	551	552	553	554	555	556	557	558	559
559	560	561	562	563	564	565	566	567	568
568	569	570	571	572	573	574	575	576	577
577	578	579	580	581	582	583	584	585	586
586	587	588	589	590	591	592	593	594	595
595	596	597	598	599	600	601	602	603	604
604	605	606	607	608	609	610	611	612	613
613	614	615	616	617	618	619	620	621	622
622	623	624	625	626	627	628	629	630	631
631	632	633	634	635	636	637	638	639	640
640	641	642	643	644	645	646	647	648	649
649	650	651	652	653	654	655	656	657	658
658	659	660	661	662	663	664	665	666	667
667	668	669	670	671	672	673	674	675	676
676	677	678	679	680	681	682	683	684	685
685	686	687	688	689	690	691	692	693	694
694	695	696	697	698	699	700	701	702	703
703	704	705	706	707	708	709	710	711	712
712	713	714	715	716	717	718	719	720	721
721	722	723	724	725	726	727	728	729	730
730	731	732	733	734	735	736	737	738	739
739	740	741	742	743	744	745	746	747	748
748	749	750	751	752	753	754	755	756	757
757	758	759	760	761	762	763	764	765	766
766	767	768	769	770	771	772	773	774	775
775	776	777	778	779	780	781	782	783	784
784	785	786	787	788	789	790	791	792	793
793	794	795	796	797	798	799	800	801	802
802	803	804	805	806	807	808	809	810	811
811	812	813	814	815	816	817	818	819	820
820	821	822	823	824	825	826	827	828	829
829	830	831	832	833	834	835	836	837	838
838	839	840	841	842	843	844	845	846	847
847	848	849	850	851	852	853	854	855	856
856	857	858	859	860	861	862	863	864	865
865	866	867	868	869	870	871	872	873	874
874	875	876	877	878	879	880	881	882	883
883	884	885	886	887	888	889	890	891	892
892	893	894	895	896	897	898	899	900	901
901	902	903	904	905	906	907	908	909	910
910	911	912	913	914	915	916	917	918	919
919	920	921	922	923	924	925	926	927	928
928	929	930	931	932	933	934	935	936	937
937	938	939	940	941	942	943	944	945	946
946	947	948	949	950	951	952	953	954	955
955	956	957	958	959	960	961	962	963	964
964	965	966	967	968	969	970	971	972	973
973	974	975	976	977	978	979	980	981	982
982	983	984	985	986	987	988	989	990	991
991	992	993	994	995	996	997	998	999	1000

* The figures in this row give the totals for the month. † The totals from January 1st.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for November is 2.28 ins.

November, 1907.

Day of Mo.		Kernley		Purley		Burgh Heath		Wotton-on-the-Hill		Head Leatherr-		D'Abemore		Chase		Bansstead		Sutton		Benhillion		Carshalton		Wallingtton		Beddington		Croydon (Ward N.r.d.)		Croydon (Ward H.Ho.)		Addington Hills		Pump. St.)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1050	1051	1052	1053	1054	1055	1056	

* The figures in this row give the totals for the month.

- The figures in this row give the totals for the month.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for November is 2.28 ins.

November, 1907.

	Day of Mo.	West	Norwood	Upper	Forest Hill	Horn-Ostd.	Deptford	Battersea	Cambridge Well	Tottenham	Greenwich	Deptford	Southwark Park
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
*	216	245	206	226	227	209	223	216	216	227	193	239	243
†	19.05	19.76	17.64	20.18	21.16	20.30	18.36	19.65	19.69	16.91	13.54	12.16	1.82

* The figures in this row give the totals for the month.

† The totals from January 1st.

NOTES.

NOVEMBER 1907.

THE month has been very warm, foggy, and damp, with a rainfall varying from the average to half an inch below, and a sunlight below the average. It has been somewhat unhealthy, with many cases of scarlet fever and diphtheria in different parts, and relaxed throats at Sevenoaks, but the death-rate has been low. As showing the mildness of the month, an observer at Croydon mentions that at Park Hill dahlias, verbenas, and nasturtiums were flourishing till the 29th and 30th, when they were blackened but not killed, and roses have bloomed right to the end of the month; and another observer mentions that he saw on the Shirley Hill gnats and other *Ephemerae* on the 2nd, and on the 3rd swallows hawking along the end of the Croham Road; while another one mentions *Tropaeolum majus* in flower at the end of the month. At Nutfield Priory salvias, dahlias, mignonette, geraniums, calceolarias, and lobelia were in flower till the end of the month; and at West Wickham dahlias and ivy-leaved geraniums were in flower till the 21st. There was a rainbow at Wallington at 10 a.m. on the 27th; and in the evening of that day there was thunder and lightning at Greenwich, and lightning only in the rest of the district. At Greenwich there was a solar halo on the 2nd, and at Epsom on the 2nd and 16th; and lunar ones at Upper Gatton and Greenwich on the 12th, at Wallington on the 16th, and at Epsom on the 12th, 14th, and 16th. The mean temperature of the month was about one degree above the average (both the day and night temperatures being high), and was at Wallington $45^{\circ}1$, at Croydon (Park Hill House) and Worcester Park $44^{\circ}8$, and at Warlingham and Epsom $44^{\circ}2$. At Park Hill House, Croydon, percolation commenced on the 26th, and evaporation was .63, or fifty per cent. above the average. There were recorded at Wallington 39.4 hours of sunlight, which is 21.5 hours, or four per cent. below the November average of the twenty years 1886-1905.

F. CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

NOTES.

DECEMBER, 1907.

THE month has been very warm, wet, and sunny until the last week, when a spell of cold weather, accompanied by keen easterly winds, came on. As showing the mildness of the month, it may be mentioned that at Wallington a large white moth was seen outdoors at 8.30 p.m. on the 1st, and several small white moths at 4.45 p.m. on the 2nd; and that on Christmas Day, at Keston, roses and primroses were gathered, at Sevenoaks La France roses, and no less than twenty-two plants were flowering at Croydon, and autumn chrysanthemums were in full flower at Sanderstead until the 22nd. On Christmas Day there was a gale at Wallington, and fences were blown down in the Park Road; and on the Sewage Farm at Beddington a tree was much broken. Sheet lightning was observed at many places in the district between the 3rd and the 8th, and there was a distant thunderstorm at Epsom on the 12th. On the 8th, at Outwood, there was a fine afterglow at sunset; and at Abinger, on the same day, at 5.55 p.m., there was observed a very brilliant meteor. There was slight snow throughout the district on the 29th and 30th. At Upper Gatton, on the 23rd, at 1.50 p.m., there was a dense black fog. Solar haloes were seen on the 1st, 11th, and 17th at Epsom, and at Greenwich on the 17th; whilst lunar ones were observed at Greenwich on the 17th, at Upper Gatton on the 15th and 17th, and at Epsom on the 15th, 17th, and 22nd. There was fog on many days. The month has been a healthy one. The mean temperature of the month is about $2^{\circ}5$ above the average, and was at Wallington $42^{\circ}1$, at Worcester Park $41^{\circ}9$, at Croydon (Park Hill House) and Epsom $41^{\circ}5$, and at Warlingham $40^{\circ}4$. At Croydon (Park Hill House) evaporation was 0.865 in., which is no less than four times the average, whilst percolation through the chalk since November 26th was no less than 4.49 in. There were recorded at Wallington 55.2 hours of sunlight, which is 17.6 hours, or seven per cent., above the December average of the twenty years 1886-1905.

FRANCIS CAMPBELL-BAYARD, F.R.Met.Soc.,
Hon. Sec.

MONTHLY GAGEE.											
Devenecks	IN.										
Wallingham	IN.										
Chelsham	IN.										
Knockholt	IN.										
Mechacht	IN.										
Knockholt	IN.										
Belde Gaun-	IN.										
(Power ga.)	IN.										
Cheveninge	IN.										
Parke	IN.										
Westham	IN.										
(Hill Est.)	IN.										
Westham	IN.										
Catherham	IN.										
Chaldon	IN.										
Gatton	IN.										
Mersham	IN.										
Chipping	IN.										
Hilfet Hill	IN.										
Buckland	IN.										
South Nutfield	IN.										
Nutfield	IN.										
(Old gauge)	IN.										
(New gauge)	IN.										
Redhill	IN.										
Betchworth	IN.										
Dorking	IN.										
(Denbries)	IN.										
Abinger	IN.										
The Hall	IN.										
Abinger	IN.										
Reigate	IN.										
Holmbury	IN.										
S. Mary	IN.										
Day of Mo.	IN.										
1	1.4	.27	.33	.38	.34	.28	.24	.23	.23	.23	.28
2	.19	.29	.33	.38	.34	.28	.24	.23	.23	.23	.28
3	.14	.22	.29	.33	.34	.28	.24	.23	.23	.23	.28
4	.14	.25	.33	.36	.32	.27	.23	.23	.23	.23	.28
5	.14	.24	.32	.34	.28	.23	.23	.23	.23	.23	.28
6	.12	.38	.38	.38	.38	.34	.30	.35	.35	.35	.38
7	.12	.14	.14	.14	.12	.10	.07	.07	.07	.07	.10
8	.12	.14	.15	.15	.14	.12	.10	.07	.07	.07	.10
9	.12	.14	.15	.15	.14	.12	.10	.07	.07	.07	.10
10	.11	.56	.55	.67	.85	.60	.36	.27	.46	.46	.65
11	.11	.56	.55	.67	.85	.60	.36	.27	.46	.46	.65
12	.11	.51	.51	.51	.34	.39	.45	.45	.43	.32	.55
13	.11	.71	.71	.71	.75	.78	.74	.55	.62	.61	.70
14	.11	.71	.71	.71	.75	.78	.74	.55	.62	.61	.70
15	.11	.71	.71	.71	.75	.78	.74	.55	.62	.61	.70
16	.11	.71	.71	.71	.75	.78	.74	.55	.62	.61	.70
17	.11	.08	.06	.08	.04	.04	.04	.02	.02	.02	.08
18	.11	.08	.06	.08	.04	.04	.04	.02	.02	.02	.08
19	.11	.08	.06	.08	.04	.04	.04	.02	.02	.02	.08
20	.11	.08	.06	.08	.04	.04	.04	.02	.02	.02	.08
21	.11	.08	.06	.08	.04	.04	.04	.02	.02	.02	.08
22	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14
23	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14
24	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14
25	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14
26	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14
27	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14
28	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14
29	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14
30	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14
31	.11	.14	.12	.12	.10	.12	.12	.09	.09	.09	.14

* The figures in this row give the totals for the month.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for December is 1.96 ins.

December, 1907.

Day of Month	Kennedy (Place Field)	Sanderstede	Purley	Burgess Heath	Waterton-on-the-Hill	Hedley	Leatherhead	D'Abernon	Chase Head	Barnstaple	Sutton (Waterworks)	Sutton (Sewer, Wks.)	Benthillton	Carshalton	Wallingford	Croydon (Wm. N. rd.)	Croydon (Pkr. H. rd.)	Croydon (Bram. H.)	Croydon (Avond. rd.)	Addington (Hills)	St. Ives Pump. St.)		
1	.37	.36	.29	.22	.22	.16	.23	.31	.26	.19	.20	.20	.15	.21	.29	.32	.30	.28	.32	.33	.32	.44	.39
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31																							
*	3.65	3.22	3.38	3.80	3.84	3.92	3.82	3.40	3.52	3.80	3.51	3.10	2.68	2.89	2.99	2.97	3.00	2.78	2.92	3.38	3.07	3.50	3.19
†	26.18	23.75	25.10	..	27.97	29.69	27.15	25.72	28.24	26.26	22.13	22.88	21.47	21.86	23.90	23.09	23.52	21.84	21.97	25.31	24.62	25.92	24.71

* The figures in this row give the totals for the month.

† The totals from January 1st

Day of Mo.	West	Wickeleham	Hedges	Keston	Orpington	Southfleet	Chislehurst	Bromley	Orpington	Morwood	South	Anerley	Wimbledon	Seew. Wks.	Wimbledon	Seew. Wks.	Malden	Worchester	Essex	Molesey	Surbiton	Kingston	Richmond	Emm. Grd.	Kew	Cum. G.			
1	.46	.23	.25	.25	.20	.20	.20	.35	.34	.37	.35	.23	.20	.20	.20	.20	.20	.23	.14	.15	.14	.04	.04	.24	.04	.27	.18	.10	
2	.41	.48	.25	.25	.20	.23	.20	.35	.34	.37	.35	.23	.20	.20	.20	.20	.20	.23	.14	.15	.14	.04	.04	.22	.10	.15	.11	.13	.11
3	.41	.46	.23	.25	.20	.23	.20	.35	.34	.37	.35	.23	.20	.20	.20	.20	.20	.23	.14	.15	.14	.04	.04	.24	.04	.27	.18	.10	
4	.41	.48	.25	.25	.20	.23	.20	.35	.34	.37	.35	.23	.20	.20	.20	.20	.20	.23	.14	.15	.14	.04	.04	.22	.10	.15	.11	.13	.11
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30																													
31																													
*	3-55	3-04	3-11	2-91	2-37	2-51	2-58	2-64	2-89	2-28	2-55	2-84	2-74	3-29	3-07	2-66	2-95	2-65	3-04	2-89	3-56	3-09	3-25	3-77	3-75	3-77	3-75		
†	26-27	23-34	24-67	22-06	21-16	20-44	22-56	22-04	20-57	22-10	22-39	20-32	24-20	21-42	19-57	21-96	21-24	22-43	21-93	24-27	23-20	21-86	25-62	25-24	25-24	25-24			

* The figures in this row give the totals for the month.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for December is 1.96 ins.

December, 1907.

Day of Mo.	Kennedy (Peacefield)	Purley	Bronet. steead.	Walton-on. Hill	Hedley	Leather. head.	D'Abemont	Chase	Epsonm	Bansstead	utton	Watervlk.	Bottom	Beddinge. ton	Wallingto	Carsbathon	Groyston	Groyston (Brim. Bn.)	Groyston (Wood. N.rd.)	Groyston (Wrd. N.rd.)	Groyston (Pkr.H. rd.)	Groyston (Brnm. H.)	Groyston (Avond. rd.)	Groyston (Hills)	Addington	Fumby. St.)		
1	.37	.36	.36	.30	.30	.36	.38	.35	.36	.36	.31	.23	.22	.22	.22	.20	.19	.26	.20	.20	.20	.20	.20	.20	.20	.20	.20	
2	.37	.36	.36	.30	.30	.36	.38	.35	.36	.36	.31	.23	.22	.22	.22	.21	.19	.26	.20	.20	.20	.20	.20	.20	.20	.20	.20	
3	.34	.34	.34	.30	.30	.36	.38	.35	.36	.36	.31	.23	.22	.22	.22	.21	.16	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	
4	.34	.34	.34	.30	.30	.36	.38	.35	.36	.36	.31	.23	.22	.22	.22	.21	.14	.21	.21	.21	.21	.21	.21	.21	.21	.21	.21	
5	.36	.36	.36	.30	.30	.36	.38	.35	.36	.36	.31	.23	.22	.22	.22	.21	.16	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	
6	.36	.36	.36	.30	.30	.36	.38	.35	.36	.36	.31	.23	.22	.22	.22	.21	.16	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	
7	.35	.35	.35	.30	.30	.36	.38	.35	.36	.36	.31	.23	.22	.22	.22	.21	.16	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	
8	.35	.35	.35	.30	.30	.36	.38	.35	.36	.36	.31	.23	.22	.22	.22	.21	.16	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	
9	.44	.44	.44	.39	.39	.45	.45	.39	.45	.45	.37	.36	.36	.36	.36	.37	.31	.30	.27	.30	.33	.33	.33	.33	.33	.33	.33	.33
10	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.01	.23	.22	.22	.22	.21	.16	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
11	.27	.27	.27	.22	.22	.27	.27	.22	.27	.27	.22	.23	.22	.22	.22	.21	.16	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
12	.55	.48	.53	.39	.43	.46	.46	.39	.43	.43	.39	.34	.34	.34	.34	.31	.16	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
13	.71	.59	.66	.58	.66	.53	.48	.42	.42	.42	.42	.39	.34	.34	.34	.31	.16	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25	.25
14
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21
22
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30
31
*	3.65	3.22	3.38	3.80	3.84	3.92	3.82	3.40	3.52	3.80	3.51	3.10	2.68	2.89	2.99	2.97	3.00	2.78	2.92	3.38	3.07	3.39	3.50	3.19	3.19	3.19	3.19	
†	26.18	23.75	25.10	..	27.97	29.69	27.15	25.72	28.24	26.26	22.13	22.88	21.47	21.86	23.90	23.09	23.52	21.84	21.97	25.31	24.62	25.92	25.41	24.71	24.71	24.71	24.71	

RECORD CEASED.

Daily Rainfall.

The 90 years (1815-1904) average at Greenwich for December is 1.96 ins.

December, 1907.

Day of Mo.	West Wickham	Hayes	Keston	Orpington	Southfleet	Chislehurst	Bromley	Beckenham	Merton	Wimbledon (Sew. Wks.)	Theledown	Priorynes	New Malden	Woolwich	West Dulwich	South Norwood	Beddington	Wimbledon (Sew. Wks.)	Wimbledon (Sew. Wks.)	Kingston Wks.	Kingston (County H.)	Kew Grd.	Kew	Cumb. G.		
1	.46	.41	.48	.35	.20	.34	.37	.35	.23	.26	.24	.04	.27	.22	.18	.14	.15	.14	.04	.12	.06	.08	.09	.08	.07	.08
2	.46	.41	.23	.25	.23	.15	.20	.20	.14	.15	.14	.04	.12	.15	.07	.13	.10	.10	.08	.10	.09	.10	.10	.10	.17	.18
3	.46	.41	.23	.25	.23	.15	.20	.20	.14	.15	.14	.04	.12	.15	.07	.13	.10	.10	.08	.10	.09	.10	.10	.10	.17	.19
4	.46	.41	.23	.25	.23	.15	.20	.20	.14	.15	.14	.04	.12	.15	.07	.13	.10	.10	.08	.10	.09	.10	.10	.10	.17	.19
5	.46	.41	.23	.25	.23	.15	.20	.20	.14	.15	.14	.04	.12	.15	.07	.13	.10	.10	.08	.10	.09	.10	.10	.10	.17	.19
6	.20	.17	.17	.14	.12	.13	.12	.12	.08	.11	.12	.06	.08	.09	.08	.09	.09	.09	.08	.09	.09	.08	.08	.08	.08	.08
7	.30	.30	.40	.36	.24	.28	.31	.28	.32	.30	.31	.28	.27	.31	.30	.28	.28	.27	.31	.30	.30	.34	.33	.32	.35	.35
8	.19	.19	.16	.17	.15	.13	.11	.15	.10	.10	.09	.10	.09	.18	.16	.13	.10	.13	.09	.14	.13	.10	.06	.18	.16	.16
9	.53	.53	.43	.43	.37	.36	.29	.30	.34	.33	.30	.31	.30	.36	.38	.44	.27	.33	.25	.29	.31	.40	.37	.36	.36	
10	.30	.30	.30	.22	.17	.11	.18	.13	.19	.16	.22	.17	.21	.20	.20	.20	.20	.20	.01	.01	.01	.01	.01	.01	.01	
11	.48	.48	.66	.51	.47	.49	.54	.50	.45	.48	.47	.47	.53	.53	.53	.53	.47	.46	.46	.46	.46	.46	.46	.46	.46	
12	.30	.30	.35	.41	.36	.36	.36	.36	.30	.29	.43	.36	.47	.47	.47	.47	.47	.48	.48	.48	.48	.48	.48	.48	.48	
13	.66	.66	.72	.69	.51	.47	.49	.54	.50	.43	.45	.45	.48	.48	.48	.48	.48	.49	.40	.46	.46	.47	.47	.47	.47	
1401	.02	.	.01	.02	.	.01	
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18	.03	.03	.0302	.03	.02	.04	.01	.02	.04	.01	.02	.04	.01	.02	.03	.03	.04	.04	.03	
190102	.0101	.	.03	
2002	.	.	.02	.01	
21	.	.	.	.	.	.	.	.	.01	.	.02	.	.01	.	.	.	.	.	.	.	.	.	.	.	.
22	.09	.11	.07	.05	.04	.09	.13	.09	.12	.10	.11	.11	.17	.19	.16	.20	.13	.30	.42	.25	.40	.30	.48	.42	.41	
23	.03	.04	.04	.02	.01	.06	.02	.03	.06	.03	.03	.04	.03	.04	.03	.02	.06	.08	.15	.04	.03	.05	.05	.21	.23	
24
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*	3.55	3.04	3.11	2.91	2.37	2.51	2.58	2.64	2.89	2.88	2.55	2.84	2.74	3.29	3.07	2.66	2.95	2.65	3.04	2.89	3.56	3.09	3.25	3.77	3.75	
†	26.27	23.34	24.67	22.06	21.16	20.44	22.56	22.04	20.57	22.10	22.39	20.32	24.20	21.42	19.57	21.96	21.24	22.43	21.93	24.27	23.20	21.86	25.62	25.24		

* The figures in this row give the totals for the month.
† The totals from January 1st.

Daily Rainfall.

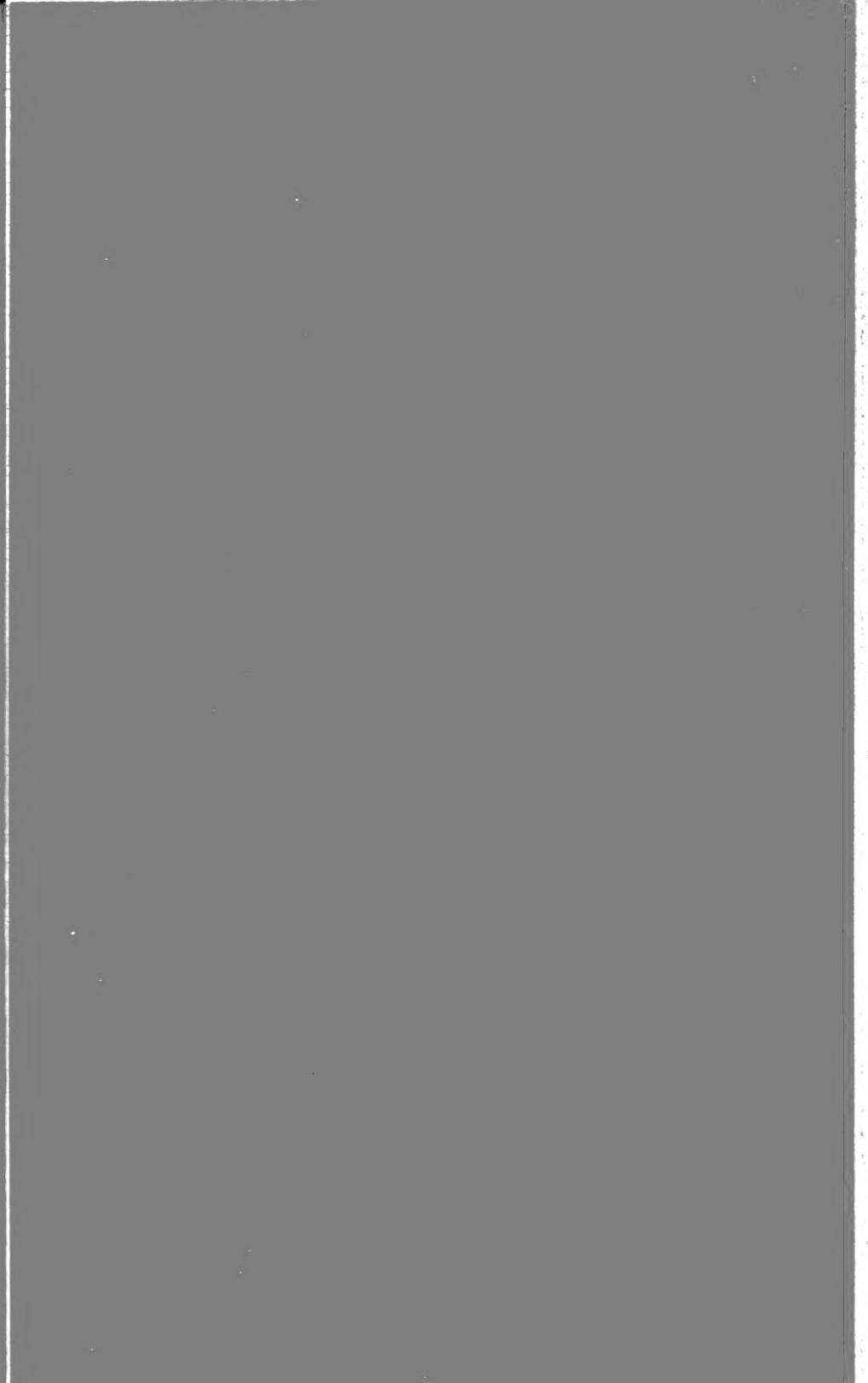
The 90 years (1815-1904) average at Greenwich for December is 1.96 ins.

December, 1907.

Day of Mo.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Mo.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Year	1815	1816	1817	1818	1819	1820	1821	1822	1823	1824	1825	1826	1827	1828	1829	1830	1831	1832	1833	1834	1835	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845	1846	1847	1848
Southwark Park		
Deptford		
Greenwich		
Hill		
Telbridge		
Cambridge Well		
Town Hall		
Cambridge Well		
Theatre		
Waterloo		
Battersea Park		
Claapham Park		
Brockwell Hill		
Dunwich		
Eltham		
Dartford		
Wilmington		
Sidcup		
Forest Hill (Cemeteries)		
Forest Hill (Dartford)		
West Norwood		
Streatham Common		
Putney Heath		
Day of Mo.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			

† The totals from January 1st.

* The figures in this row give the totals for the month.



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Croydon Natural History and Scientific Society.

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